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NATIONAL SECURITY AGENCY CENTRAL SECURITY SERVICE FORT GEORGE G. MEADE, MARYLAND 20755-6000

FOIA Case: 66050B 17 June 2014

JOHN GREENEWALD THE BLACK VAULT

Dear Mr. Greenewald:

This further responds to your Freedom of Information Act (FOIA) request of 26 December 2011 for "a copy of each document at the National Security Agency concerning the famous KRYPTOS sculpture located on the grounds of the Central Intelligence Agency. Please review and release both documents that have already been made available as well as documents that have not yet been reviewed and/or released. I am particularly interested in documents regarding the as-yet undecrypted fourth message." A copy of your request is enclosed. Your request has been processed under the FOIA, and eight of the documents are enclosed. Certain information, however, has been deleted from the enclosures.

Some of the information deleted from the documents has been found to be currently and properly classified in accordance with Executive Order 13526. The information meets the criteria for classification as set forth in Subparagraph (c) of Section 1.4 and remains classified CONFIDENTIAL as provided in Section 1.2 of Executive Order 13526. The information is classified because its disclosure could reasonably be expected to cause damage to the national security Because the information is currently and properly classified, it is exempt from disclosure pursuant to the first exemption of the FOIA (5 U.S.C. Section 552(b)(1)).

In addition, this Agency is authorized by various statutes to protect certain information concerning its activities. We have determined that such information exists in these documents. Accordingly, those portions are exempt from disclosure pursuant to the third exemption of the FOIA, which provides for the withholding of information specifically protected from disclosure by statute. The specific statutes applicable in this case are Title 18 U.S. Code 798; Title 50 U.S. Code 3024(i); and Section 6, Public Law 86-36 (50 U.S. Code 3605).

The Initial Denial Authority for NSA information is the Associate Director for Policy and Records, David J. Sherman. Since these deletions may be construed as a partial denial of your request, you are hereby advised of this Agency's appeal procedures. Any person denied access to information may file an appeal to the NSA/CSS Freedom of Information Act Appeal Authority. The appeal must be postmarked no later than 60 calendar days from the date of the initial denial letter. The appeal shall be in writing addressed to the NSA/CSS FOIA Appeal Authority

FOIA Case: 66050A

(DJ4), National Security Agency, 9800 Savage Road STE 6248, Fort George G. Meade, MD 20755-6248. The appeal shall reference the initial denial of access and shall contain, in sufficient detail and particularity, the grounds upon which the requester believes release of the information is required. The NSA/CSS Appeal Authority will endeavor to respond to the appeal within 20 working days after receipt, absent any unusual circumstances.

The CIA has asked that we protect information pursuant to 5 U.S.C. 552 (b)(3). Those deletions have been marked with the code OGA (Other Government Agency). Any appeal of the denial of CIA information should be directed to that agency.

One of the documents responsive to your request originated with another government agency. That document has been forwarded to that agency for review and direct response to you.

In addition, there are two remaining documents responsive to your request under review for another FOIA request received prior to yours. When the review of those documents is complete, they will be provided to you.

For your information, all of the documents on the Kryptos Sculpture released to date are posted on the nsa.gov website, and any future releases will be added to that collection. You can find the documents at: http://www.nsa.gov/public_info/declass/cia_kryptos_sculpture.shtml.

Sincerely,

PAMELA N. PHILLIPS Chief FOIA/PA Office

Encls:

a/s

Jungerheld, James R

From:

webteam@nsa.gov

Sent:

Monday, December 26, 2011 1:25 PM

To:

FOIANET

Cc:

john@greenewald.com

Subject:

Greenewald, John - FOIA Request (Web form submission)

Name: John R Greenewald

Email: john@greenewald.com

Company: The Black Vault

Postal Address:

Postal City:



Postal State-prov: Ca

Zip Code:



Country: United States of America

Records Requested:

Dear Sir.

This is a non-commercial request made under the provisions of the Freedom of Information Act 5 U.S.C. S 552. Pursuant to the U. S. OPEN Records Act of 2007, my FOIA requester status as a "representative of the news media" -- a status entitling me to an unlimited search processing my request, and the first 100 pages free of charge. For examples of my various publication credits in this regard, I refer you to my radio network, and my own personal radio show (syndicated on FM and AM stations) at http://www.blackvaultradio.com. My internet website http://www.theblackvault.com which holds a vast government document database, along with many freelance articles that I have written, which have also been published in magazines and websites, including OpEdNews.com, UFO Magazine, FATE Magazine, and others.

Additionally, I agree to pay fees up to ten dollars.

I respectfully request a copy of a copy of each document at the National Security Agency concerning the famous KRYPTOS sculpture located on the grounds of the Central Intelligence Please review and release both documents that have already been made available as well as documents that have not yet been reviewed and/or released. I am particularly interested in documents regarding the as-yet undecrypted fourth message.

Thank you so much for your time, and I am very much looking forward to your response. Please know that electronic delivery of the requested material or correspondence related to this case is preferred and accepted in lieu of paper copies via snail mail.

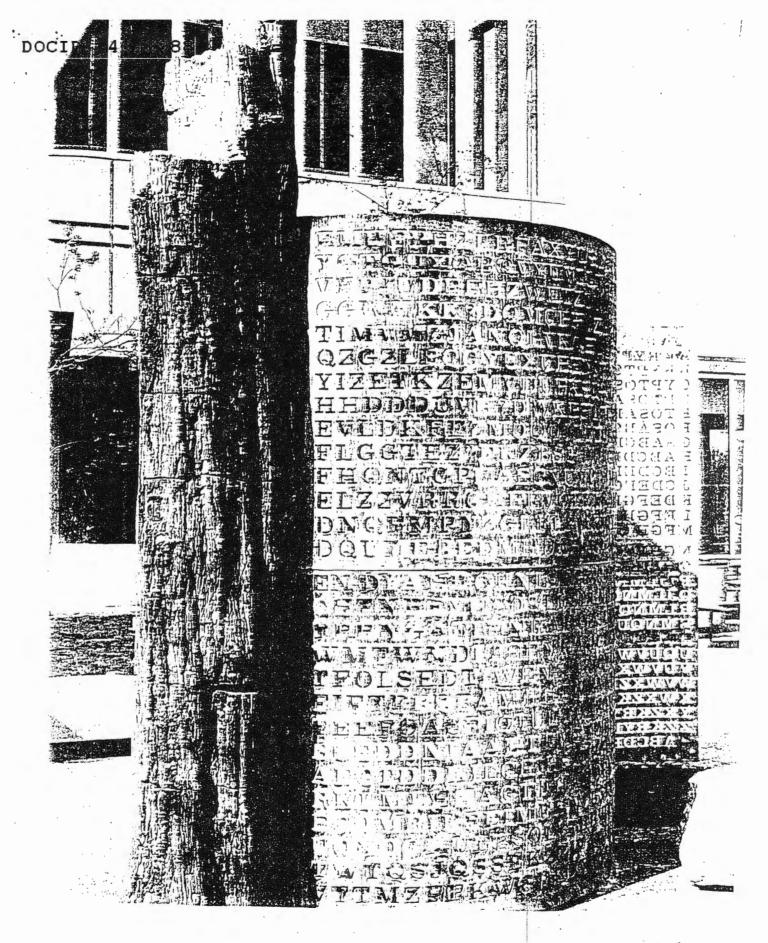
Sincerely,

John Greenewald, Jr.

DOCID: 4050988 UNITED STATES GOVERNMENT 7-043-93 9 June 1993 DATE: FORWARD TO ADMIRAL REPLY TO STUDEMAN FOR INFO CIA KRYPTOS Sculpture - Challenge and Resolution (FOUO) SHBJECT: INFORMATION MEMORANDUM DIR M TO: THRU: EXEC/DIR 1. 4F0U0) The KRYPTOS sculpture, located at the entrance and in the courtyard of the new CIA headquarters, consists of a series of stone "pages" containing code which begins as International Morse and increases in complexity as the stonework extends into the courtyard. Inserted between these stone "pages" is a flat copper sheet engraved with letters and symbols - the enciphered message - that is the focus of this challenge. 2. (FOCK) In November, a cadre of cryptanalysts assigned to Z Group enthusiastically responded to the challenge. Within one month, three of the four cipher systems used to encrypt the sculpture's plain text had been diagnosed and completely exploited. The cryptographies employed for the encryption of these three parts involved two periodic polyalphabetic substitution ciphers and a keyed columnar transposition cipher. The exploitation of the sculpture's first three parts constitutes a readapility of approximately 89%. The final 97 characters continue to elude solution. -(FOUO) Attached, for your review, is a brief description of the employed cryptographies and the plain text derived from the three exploited portions of the KRYPTOS sculpture. If your schedule permits, we would be happy to present a 15-minute briefing on the KRYPTOS sculpture solution and introduce you to the cryptanalysts responsible for the success (b)(3)-P.L. 86-36 3 Encls: 1. Copy of Sculpture Picture 2. Copy of Cipher 3. Description of Cryptographies cc: Z4 Z43 Derived fm: NSA Class. Guide 342-97 29 May 1997 Dulanity on: X1, X5 OPTIONAL FORM

Irane Frage 11 Junes

Approved for Release by NSA on 05-21-2013, FOIA Case # 61191



THE KRYPTOS SCULPTURE CIPHER

EMUFPHZLRFAXYUSDJKZLDKRNSHGNFIVJ YOTQUXQBQVYUVLLTREVJYOTMKYRDMFD V F P J U D E E H Z W E T Z Y V G W H K K Q E T G F Q J N C E G G W H K K 2 D Q M C P F Q Z D Q M M I A G P F X H Q R L G T I M V M Z J A N Q L V K Q E D A G D V F R P J U N G E U N A Q Z G Z L E C G Y U X U E E N J T B J L B Q C R T B J D F H J R R YIZETKZEMVDUFKSJHKFWHKUWOLSZFTI H H D D D U V H ? D W K B F U F P W N T D F I Y C U O Z E R E EVLDKFEZMOQQJLTTUGSYQPFEUNLAVIDX F L G G T E Z 2 F K Z B S F D Q V G O G I P U F X H H D R K F F H O N T G P U A E C N U V P D J M O C L O U M U N E D F O ELZZVRRGKFFVOEEXBDMVPNFQXEZLGRE D N Q F M P N Z G L F L P M R J Q Y A L M G N U V P D X V K P DQUMEBEDMHDAFMJGZNUPLGEWJLLAETG ENDYAHROHNLSRHEOCPTEOIBIDYSHNAIA CHTNREYULDSLLSLLNOHSNOSMRWXMNE TPRNGATIHNRARPESLNNELEBLPIIACAE W M T W N D I T E E N R A H C T E N E U D R E T N H A E O E TFOLSEDTIWENHAEIOYTEYQHEENCTAYCR EIFTBRSPAMHHEWENATAMATEGŸEERLB TEEFOASFIOTUETUAEOTOARMAĖERTNRTI BSEDDNIAAHTTMSTEWPIEROAGRIEWFEB A E C T D D H I L C E I H S I T E G O E A O S D D R Y D L O R I T RKLMLEHAGTDHARDPNEOHMGFMFEUHE ECDMRIPFEIMEHNLSSTTRTVDOHW20BKR UOXOGHULBSOLIFBBWFLRVQQPRNGKSSO TWTQSJQSSEKZZWATJKLUDIAWİNFBNYP V T T M Z F P K W G D K Z X T J C D I G K U H U Å U E K C A R

DOCID: 4050988 SEEPET

PART 1

(su)-

Cryptography: Periodic Polyalphabetic Substitution employing

10 alphabets

Plain component: Keyword mixed sequence based on KRYPTOS Cipher component: Keyword mixed sequence based on KRYPTOS

Repeating Key:

PALIMPSEST

Index letter:

K

P: K R Y P T O S A B C D E F G H I J L M N Q U V W X Z K R Y C1: P T O S A B C D E F G H I J L M N Q U V W X Z K R Y C2: A B C D E F G H I J L M N Q U V W X Z K R Y P T O S C3: L M N Q U V W X Z K R Y P T O S C3: L M N Q U V W X Z K R Y P T O S C4: L J J L M N Q U V W X Z K R Y P T O S A B C D E F G H I J L C4: L J L M N Q U V W X Z K R Y P T O S A B C D E F G H I J L C5: M N Q U V W X Z K R Y P T O S A B C D E F G H I J L C6: P T O S A B C D E F G H I J L C6: P T O S A B C D E F G H I J L C6: E F G H I J L M N Q U V W X Z K R Y P T O C8: E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R R Y P T O C6: S A B C D E F G H I J L M N Q U V W X Z K R R Y P T O C6: S A B C D C D E F G M I J L M N Q U V W X Z K R R Y P T O C6: S A B C D C D E F G M I J L M N Q U V W X Z K R R Y P T O C6: S A B C D C D E F G M I J L M N Q U V W X Z K R R Y P T O C6: S A B C D C D E F G M I J L M N Q U V W X Z K R R Y P T O C6: S A M S C D C D E F

EMUFPHZLRF AXYUSDJKZL DKRNSHGNFI VJYQTQUXQB BETWEENSUB TLESHADING ANDTHABSCE NCEOFLIGHT

QVYUVLLTRE VJYQTMKYRD MFD LIESTHENUA NCEOFIQLUS ION

(FOUO) Respaced and punctuated, it reads:

"BETWEEN SUBTLE SHADING AND THE ABSENCE OF LIGHT LIES THE NUANCE OF ILLUSION"

PART 2

K

Cryptography: Periodic Polyalphabetic Substitution employing

-8 alphabets

Plain component: Keyword mixed sequence based on KRYPTOS

Cipher component: Keyword mixed sequence based on KRYPTOS

Repeating Key:

ABSCISSA

Index letter:

K

P: KRYP TOSABCDEFGHIJLMNQUVWXZ

C1: ABCDEFGHIJLMNQUVWXZKRYPTOS

C2: BCDEFGHIJLMNQUVWXZKRYPTOSA

C3: SABCDEFGHIJLMNQUVWXZKRYPTÓ

C4: CDEFGHI JLMNQUVWXZKRYPTOSAB

C5: IJLMNO UVWXZKRYPTOSABCDEFGH

C6: SABCDEFGHIJLMNOUVWXZKRYPTO

C7: SABCDEFGHIJLMNQUVWXZKRYPTO

C8: ABCDEFGHIJLMNQUVWXZKRYPTOS

VFPJUDEE HZWETZYV GWHKKQET GFQJNCEG GWHKK?DQM ITWASTOT ALLYINVI SIBLEHOW STHATPOS SIBLE?THE

CPFOZDOM MIAGPFXH QRLGTIMV MZJANQLV KQEDAGDV

YUSEDTHE EARTHSMA GNETICFI ELDXTHEI NFORMATI

FRPJUNGE UNAOZGZŁ ECGYUXUE ENJTBJLB OCETBJDF

ONWASGAT HEREDAND TRANSMIT TEDUNDER GROUNDTO

HRRYIZET KZEMVDUF KSJHKFWH KUWQLSZF TIHHDDDU

ANUNKNOW NLOCATIO NXDOESLA NGLEYKNO WABOUTTH

VH?DWKBFU FPWNTDKI YCUQZERE EVLDKFEZ MOQQJLTT

IS?THEYSH OULDITSB URIEDOUT THERESOM EWHEREXW

UGSYOPFE UNLAVIDX FLGGTEZ?F KZBSFDOV GOGIPUFX

HOKNOWST HEEXACTL OCATION ONLYWWTHI SWASHISL

HHDRKFFH QNTGPUAE CNUVPDJM QCLQUMUN EDFQELZZ

ASTMESSA GEXTHIRT YEIGHTDE GREESFIF TYSEVENM

VRRGKFFV OEEXBDMV PNFQXEZL GREDNQFM PNZGLFLP

INUTESSI XPOINTFI VESECOND SNORTHSE VENTYSEV

MRJQYALM GNUVPDXV KPDQUMZB EDMHDAFM JGZNUPLG ENDEGREE SEIGHTMI NUTESFOR TYFOURSE

CONDSWES

EWJLLAET G TIDBYROW S

(FOUO) Respaced and punctuated, it reads:

"IT WAS TOTALLY INVISIBLE. HOW'S THAT POSSIBLE? THEY USED THE EARTH'S MAGNETIC FIELD. THE INFORMATION WAS GATHERED AND TRANS-MITTED UNDERGROUND TO AN UNKNOWN LOCATION. DOES LANGLEY KNOW ABOUT THIS? THEY SHOULD. ITS BURIED OUT THERE SOMEWHERE. WHO KNOWS THE EXACT LOCATION? ONLY W.W. THIS WAS HIS LAST TRANSMISSION. THIRTY-EIGHT DEGREES, FIFTY-SEVEN MINUTES, SIX POINT FIVE SECONDS NORTH. SEVENTY-SEVEN MINUTES, FORTY-FOUR SECONDS WEST. I.D. BY ROWS."

Sch Note: W.W. is presumed to be William Webster. refer to the location of or a location within the Central Intelligence Agency. The significance of I.D. BY ROWS remains undetermined.

The coordinates

PART 3

-(SC)

Cryptography: Keyed Columnar transposition Matrix size: Incompletely filled 4 X 86

Specific key: KRYPTOS, numerically keyed and repeated 13 times

(first 12 columns listed below)

Route:

Bottom to top

SLOWLYDESPARATLYSLOWLYTHEREMAINSOFPASSAGEDE
ASREMOVEDWITHTREMBLINGHANDSIMADEATINYBREACH
OLEALITTLEIINSERTEDTHECANDLEANDPEEREDINTHEH
FLICKERBUTPRESENTLYDETAILSOFTHEROOMWITHINEM

1 1 1 9 8 7
2 1 0

BRISTHATENCUMBEREDTHELOWERPARTOFTHEDOORWAYW
INTHEUDDERLEETHANDCORNERANDTHENWIDENINGTHEH

BRISTHATENCUMBEREDTHELOWERPARTOFTHEDOORWAYW

INTHEUPPERLEFTHANDCORNERANDTHENWIDENINGTHEH

OTAIRESCAPINGFROMTHECHAMBERCAUSEDTHEFLAMETO

ERGEDFROMTHEMISTXCANYOUSEEANYTHINGQ

6 5 4 3 2 1

"SLOWLY DESPARATLY SLOWLY THE REMAINS OF PASSAGE DEBRIS THAT ENCUMBERED THE LOWER PART OF THE DOORWAY WAS REMOVED. WITH TREMBLING HANDS I MADE A TINY BREACH IN THE UPPER LEFT HAND CORNER, AND THEN, WIDENING THE HOLE A LITTLE, I INSERTED THE CANDLE AND PEERED IN. THE HOT AIR ESCAPING FROM THE CHAMBER CAUSED THE FLAME TO FLICKER, BUT PRESENTLY, DETAILS OF THE ROOM WITHIN EMERGED FROM THE MIST X CAN YOU SEE ANYTHING O"

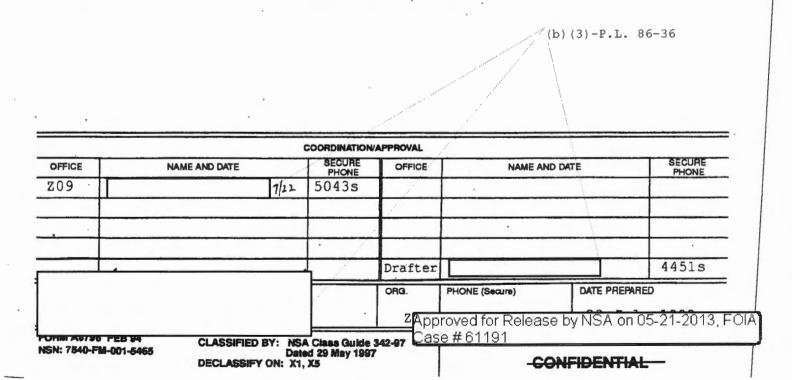
Note: The above is a paraphrase from The Tomb of Tut-Ankh-Amen written by Mr. Howard Carter.

DOČID:	40 50000	ENTIAL -
•	SECURITY CL	ASSIFICATION
NSA S	TAFF PROC	ESSING FORM
то		EXREG CONTROL NUMB

DDO DDO	EXREG CONTROL NUMBER		KCC CONTROL NUMBER Z CONTROL Z-054-				
THRU		ACT	ACTION EXREG SUSPENSE APPROVAL KCC SUSPENSE				
CIA KRYPTOS S Resolution (U	Sculpture The Challenge	and X	ACTION INFORMATION	ELEMENT SUSPENSE			
Z 4							

SUMMARY

- (b)(3)-P.L. 86-36
- 1. (U) In response to your request we have put together a package chronologically outlining the events in our decryption (89%) of the CIA courtyard KRYPTOS sculpture. Also attached is a copy of the original memorandum to Adm. McConnell with attachments providing the cipher, the cryptography employed, and the respective decrypts.
- 2. (U) The initial examination of the cipher revealed that it was likely to consist of three cryptographically distinct sections. Basic computer diagnostic tools confirmed this hypothesis. Subsequent analysis and solution, however, did not require any compute power.
- 3. (C) Parts 1-3 were solved within two days of receiving the informal tasking from Chief, Z. Another day was spent on the final section and a decision was made to stop any further work. Given the suspected cryptography, the last section is too short to solve without diverting a great deal of effort from operational problems.



Chronological history of NSA personnel and their involvement in the partial decryption of the KRYPTOS sculpture located in the CIA courtyard

- 1988 The CIA Fine Arts Commission approves James Sanborn's proposal.
- 1990 The artwork, titled *Kryptos*, is dedicated. A portion of this work of art consists of a classic Vigenere Square and 870 characters of cipher punched through two large copper sheets.
- 1991 While on a trip to the CIA headquarters, an informal group comprised mainly of Cryptanalysis interns, handwrites the cipher onto sheets of paper, and distributes it to any and all interested cryptanalysts back at NSA.
- 1992 Official challenge for solution is relayed through DCI at a Gold Bug award ceremony.
- 1992 Mr. is the first person to decrypt a portion of the cipher. The cipher system used is a polyalphabetic substitution using eight alphabets. The decrypted text accounts for the last 373 characters from the first section of 436, but the initial 63 characters resist decryption. Because of this, analysts concede that four distinct sections are likely, with this being the second section.

 (b) (3)-P.L. 86-36
- 1992 Mr. _______is the second person to successfully decrypt a portion of the cipher. That portion is the third section involving 337 characters and employing a transposition system using a matrix with dimensions 4 X 86.
- 1992 As the third successful cryptanalyst, Mr. successfully decrypts the initial 63 characters of the cipher, which is the first section. It also uses a polyalphabetic substitution, but with 10 alphabets.
- 1992 An informal document is produced detailing the solution of the three sections. These three sections comprise the first
 773 characters out of 870 total, leaving the last 97 characters unresolved.
- 1993 A formal letter is sent to Adm. McConnell (DIRNSA) detailing the story, and is returned with a request that it be forwarded to Adm. Studeman at CIA.
- 1998 There is renewed interest from the CIA, with an eye towards a technical article for an internal publication.

LOCID: 4050989 UNITED STATES GOVERNMENT 9 June 1993 2-043-93 DATE: FORWARD TO ADMIRAL REPLY TO ATTN OF: STUDEMAN FOR INFO SUBJECT: CIA KRYPTOS Sculpture - Challenge and Resolution (FOU) INFORMATION MEMORANDUM DIR M THRU:

The KRYPTOS sculpture, located at the entrance and in the courtyard of the new CIA headquarters, consists of a series of stone "pages" containing code which begins as International Morse and increases in complexity as the stonework extends into the courtyard. Inserted between these stone "pages" is a flat copper sheet engraved with letters and symbols - the enciphered message - that is the focus of this challenge.

EXEC/DIR

- (EOUO) In November, a cadre of cryptanalysts assigned to Z Group enthusiastically responded to the challenge. Within one month, three of the four cipher systems used to encrypt the sculpture's plain text had been diagnosed and completely exploited. The cryptographies employed for the encryption of these three parts involved two periodic polvalphabetic substitution ciphers and a keyed columnar transposition cipher. The exploitation of the sculpture's first three parts constitutes a readability of approximately 89%. The final 97 characters continue to elude solution.
- (FOUO) Attached, for your review, is a brief description of the employed cryptographies and the plain text derived from the three exploited portions of the KRYPTOS sculpture. If your schedule permits, we would be happy to present a 15-minute briefing on the KRYPTOS sculpture solution and introduce you to the cryptanalysts responsible for the success against this cipher ..

3 Encls:

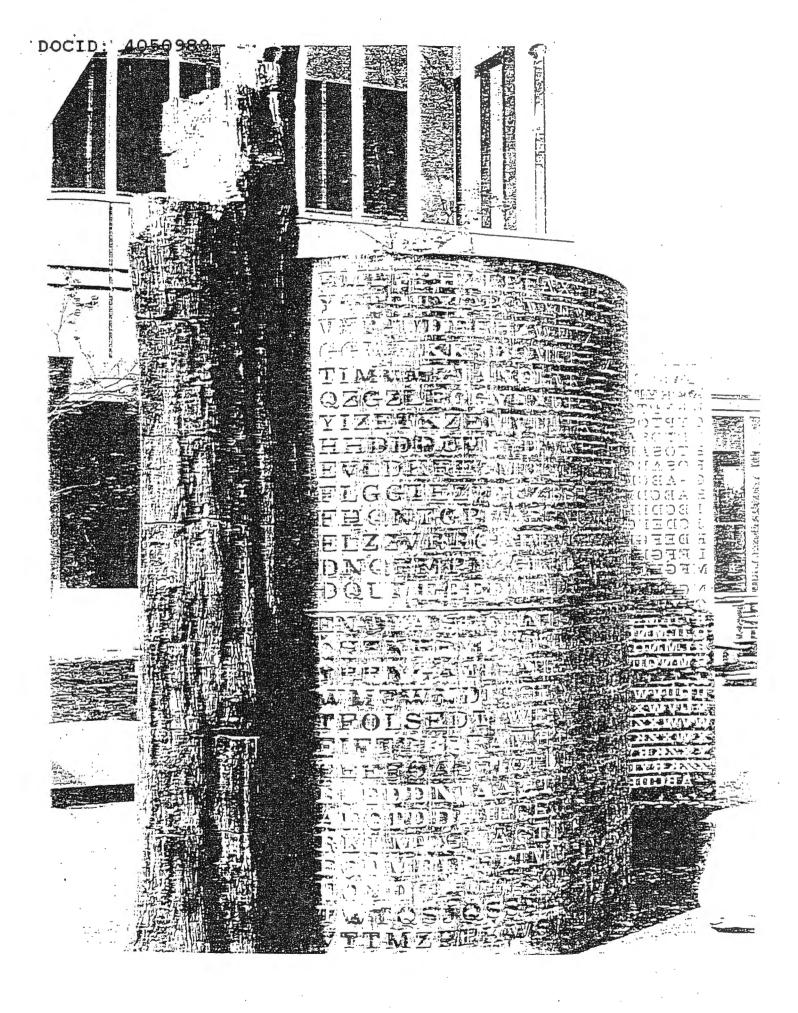
1. Copy of Sculpture Picture

2. Copy of Cipher

Description of Cryptographies

cc: Z4 Z43 (b) (3)-P.L. 86-36





THE KRYPTOS SCULPTURE CIPHER

```
EMUFPHZLRFAXYUSDJKZLDKRNSHGNFIVJ
YOTOUXQBQVYUVLLTREVJYQTMKYRDMFD
V F P J U D E E H Z W E T Z Y V G W E K K Q E T G F Q J N C E ·
G G W H K K 2 D Q M C P F Q Z D Q M M I A G P F X H Q R L G
TIMVMZJANQLVKQEDAGDVFRPJUNGEUNA
Q Z G Z L E C G Y U X U E E N J T B J L B Q C R T B J D F H J R R
YIZETKZEMVDUFKSJHKFWHKUWQLSZFTI
H H D D D U V H 2 D W K B F U F P W N T D F I Y C U Q Z E R E
EVLDKFEZMOOOJLTTUGSYQPFEUNLAVIDX
F L G G T E Z ? F K Z B S F D Q V G O G I P U F X H H D R K F
F H Q N T G P U A E C N U V P D J M Q C L Q U M U N E D F Q
ELZZVRRGKFFVOEEXBDMVPNFQXEZLGRE
DNOFMPNZGLFLPMRJQYALMGNUVPDXVKP
D Q U M E B E D M H D A F M J G Z N U P L G E W J L L A E T G
ENDYAHROHNLSRHEOCPTEOIBIDYSHNAIA
C H T N R E Y U L D S L L S L L N O E S N O S M R W X M N E
T P R N G A T I H N R A R P E S L N N E L E B L P I I A C A E
W M T W N D I T E E N R A H C T E N E U D R E T N H A E O E
T F O L S E D T I W E N H A E I O Y T E Y Q H E E N C T A Y C R
EIFTBRSPAMHHEWENATAMATEGYEERLB
T E E F O A S F I O T U E T U A E O T O A R M A E E R T N R T I
BSEDDNIAAHTTMSTEWPIEROAGRIEWFEB
A E C T D D H I L C E I H S I T E G O E A O S D D R Y D L O R I T
RKLMLEHAGTDHARDPNEOHMGFMFEUHE
ECDMRIPFEIMEHNLSSTTRTVDOHW?OBKR
UOXOGHULBSOLIFBBWFLRVQQPRNGKSSO
TWTQSJQSSEKZZWATJKLUDIAWINFBNYP
V T T M Z F P K W G D K Z X T J C D I G K U H U A U E K C A R
```

PART 1

Cryptography: Periodic Polyalphabetic Substitution employing

10 alphabets

Plain component: Keyword mixed sequence based on KRYPTOS Cipher component: Keyword mixed sequence based on KRYPTOS

Repeating Key: PALIMPSEST

Index letter: F

P: K R Y P T O S A B C D E F G H I J L M N Q U V W X Z K R Y C1: P T O S A B C D E F G H I J L M N Q U V W X Z K R Y C2: A B C D E F G H I J L M N Q U V W X Z K R Y P T O S C3: L M N Q U V W X Z K R Y P T O S A B C D E F G H I J L M N Q U V W X Z K R Y P T O S A B C D E F G H I J L M N Q U V W X Z K R Y P T O S A B C D E F G H I J L C6: P T O S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C8: E F G H I J L M N Q U V W X Z K R Y P T O C8: E F G H I J L M N Q U V W X Z K R Y P T O C8: E F G H I J L M N Q U V W X Z K R Y P T O C9: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C9: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C10: T O S A B C D E F G H I J L M N Q U V W X Z K R Y P T O C10: T O S A B C D E F G H I J L M N Q U V W X Z K R Y P T O

EMUFPHZLRF AXYUSDJKŽL DKRNSHGNFI VJYQTQUXQB BETWEENSUB TLESHADING ANDTHABSCE NCEOFLIGHT

QVYUVLLTRE VJYQTMKYRD MFD LIESTHENUA NCEOFIQLUS ION

(FOUO) Respaced and punctuated, it reads:

"BETWEEN SUBTLE SHADING AND THE ABSENCE OF LIGHT LIES THE NUANCE OF ILLUSION"

PART 2

Cryptography: Periodic Polyalphabetic Substitution employing

8 alphabets

Plain component: Keyword mixed sequence based on KRYPTOS Cipher component: Keyword mixed sequence based on KRYPTOS

Repeating Key: ABSCISSA

Index letter: K

P: KRYPTOSABCDEFGHIJLMNQUVWXZ
C1: ABCDEFGHIJLMNQUVWXZKRYPTOS
C2: BCDEFGHIJLMNQUVWXZKRYPTOSA
C3: SABCDEFGHIJLMNQUVWXZKRYPTO
C4: CDEFGHIJLMNQUVWXZKRYPTOSAB
C5: IJLMNQUVWXZKRYPTOSABCDEFGH
C6: SABCDEFGHIJLMNQUVWXZKRYPTO
C7: SABCDEFGHIJLMNQUVWXZKRYPTO
C8: ABCDEFGHIJLMNQUVWXZKRYPTO

VFPJUDEE HZWETZYV GWHKKQET GFQJNCEG GWHKK?DQM
ITWASTOT ALLYINVI SIBLEHOW STEATPOS SIBLE?THE

CPFQZDQM MIAGPFXH QRLGTIMV MZJANQLV KQEDAGDV
YUSEDTHE EARTHSMA GNETICFI ELDXTHEI NFORMATI

FRPJUNGE UNAQZGZL ECGYUXUE ENJTBJLB QCETBJDF
ONWASGAT HEREDAND TRANSMIT TEDUNDER GROUNDTO

HRRYIZET KZEMVDUF KSJHKFWH KUWQLSZF TIHHDDDU
ANUNKNOW NLOCATIO NXDOESLA NGLEYKNO WABOUTTH

VH?DWKBFU FPWNTDKI YCUQZERE EVLDKFEZ MOQQJLTT
IS?THEYSH OULDITSB URIEDOUT THERESOM EWHEREXW

UGSYQPFE UNLAVIDX FLGGTEZ?F KZBSFDQV GOGIPUFX
HOKNOWST HEEXACTL OCATION?O NLYWWTHI SWASHISL

HHDRKFFH QNTGPUAE CNUVPDJM QCLQUMUN EDFQELZZ
ASTMESSA GEXTHIRT YEIGHTDE GREESFIF TYSEVENM

VRRGKFFV OEEXBDMV PNFQXEZL GREDNQFM PNZGLFLP

INUTESSI XPOINTFI VESECOND SNORTHSE VENTYSEV

PART 3

Cryptography: Keyed Columnar transposition Matrix size: Incompletely filled 4 X 86

Specific key: KRYPTOS, numerically keyed and repeated 13 times

(first 12 columns listed below)

Route: Bottom to top

SLOWLYDESPARATLYSLOWLYTHEREMAINSOFPASSAGEDE . ASREMOVEDWITHTREMBLINGHANDSIMADEATINYBREACH OLEALITTLEIINSERTEDTHECANDLEANDPEEREDINTHEH FLICKERBUTPRESENTLYDETAILSOFTHEROOMWITHINEM 1 1 1 2 1 0 BRISTHATENCUMBEREDTHELOWERPARTOFTHEDOORWAYW INTHEUPPERLEFTHANDCORNERANDTHENWIDENINGTHEH OTALRESCAPINGFROMTHECHAMBERCAUSEDTHEFLAMETO ERGEDFROMTHEMISTXCANYOUSEEANYTHINGQ б 5 3 2 1

"SLOWLY DESPARATLY SLOWLY THE REMAINS OF PASSAGE DEBRIS THAT ENCUMBERED THE LOWER PART OF THE DOORWAY WAS REMOVED. WITH TREMBLING HANDS I MADE A TINY BREACH IN THE UPPER LEFT HAND CORNER, AND THEN, WIDENING THE HOLE A LITTLE, I INSERTED THE CANDLE AND PEERED IN. THE HOT AIR ESCAPING FROM THE CHAMBER CAUSED THE FLAME TO FLICKER, BUT PRESENTLY, DETAILS OF THE ROOM WITHIN EMERGED FROM THE MIST X CAN YOU SEE ANYTHING Q".

Note: The above is a paraphrase from The Tomb of Tut-Ankh-Amen written by Mr. Howard Carter.

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*2	transposition 3
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CSSGp Meeting/Activity Notes

/(b)(3)-P.L. 86-36

prepared 18 Dec 1991

Yes, the group name is arbitrary :CIA Sculpture Study Group). If you have a better suggestion please let us know. Any other submissions, comments, suggestions, etc. will be welcome and considered.

... On 13 December 1991 the first CSSGp analytic meeting was held in conference room 3W083. The discussions were carried on about an hour with all present contributing ideas. Any discussion of "in-house" techniques or applications (being classified) are not mentioned in this text as it is to be unclassified. Other than classified methods to be considered the meeting focused on how to identify the unique "sub-"ciphers of the sculpture in total. (Simplistic worksheets representing these identities are to be included in the distro with this newsletter.)

Also, consideration of the known Morse code parts of the art work are presented on the worksheet contributed by (882).

Larry's sheet suggests the need for us to have exacting descriptions of all aspects of this work regarding physical placements and relationships in all parts/areas of Sanborn's CIA art presentation. Some of the sculpture is at the Langley HQs front entrance (and this includes most of the Morse code) and other parts are in the central garden (including the punched-copper cipher). The relationship of all the parts of this work are unclear.

Please examine all parts of these mailings to you and then feel free to share your thoughts about them with others on the latest CSSGp analysts listing. To share/distribute any papers you come upon/create before the next meeting mail them yourself or send them to me for copying and I'll distro them asap. I will also mail/phone the notice of any scheduled CSSGp gatherings to those on the analyst listing. Please note that some of the material you get may have distribution caveats/classifications and if they do not consider them as For Official Use Only (FOUO). Do not discuss this effort in public.

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open to discussion also!). The meeting participants will define the direction of effort but each is free for their own exploration (hopefully to be shared later with all). If you wish to remain anonymous/private in your effort let me know and I'll keep that secure. It has been suggested that at some point presentations to KRYPTOS and/or others may be invited.

In	attendance	at	the	13	December	gather	ing were
					/(b)	(3)-P.L.	86-36

Again, any new items, distro, news, meeting dates, etc. will be passed on as I get them. Please call me if you want something included.

Happy Hunting! and Happy Holidays!

G411, 963-5315

NOTE: these notes were prepared at NO expense to the US Government

OPS1

OPS1

EOF

2S015

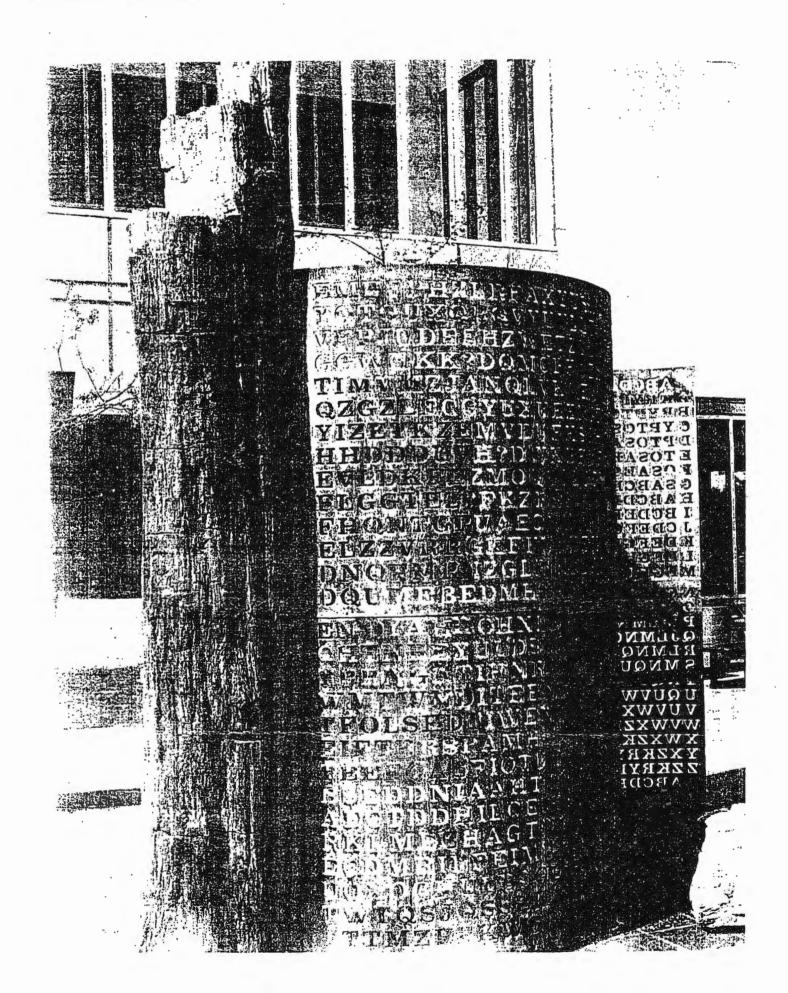
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S O S

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E F V I S I B A I E E E E E

E E E E E E S E ? R O L

E E E U I ? D F

E Q R O M E M

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D I G I T A L E E E

I N T E R P R E T A T I T

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E E V I R T U A L L Y E

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DATE:	26 March 1992 (b)(3)-P.L. 86-36
REPLY TO ATTN OF:	26 March 1992 (b)(3)-P.L. 86-36
SUBJECT:	KRYPTOS sculpture
то:	244

(FOUC) In response to a direct challenge from the Central Intelligence Agency, NSA analysts have successfully diagnosed and read a major portion of the KRYPTOS sculpture, located in the courtyard of CIA in Langley, Virginia. As of 1 Dec 92, the cipher has been divided into four sections, with complete analysis and decryption completed on the first 3 parts.

(FOUO) Cipher parts 1 and 2 were encrypted using polyalphabetic substitution system. Part 1 employed 10 alphabets, while part 2 used 8 alphabets. The third section was encrypted using a route transposition on a width of 86.

the absense of light lies the nuance of iqlusion.[sic]"

L. LEOWO: The decrypted text of part 2: "It was totally invisible. How's that possible? They used the earth's magnetic field. information was gathered and transmitted underground to an unknown location. Does Langley know about this? They should. It's buried They should. It's buried out there somewhere. Who knows the exact location? Only W.W. This was his last message. Thirty-eight degrees, fifty-seven minutes, six point five seconds north. Seventy-seven degrees, eight minutes, forty-four seconds west. I.D. by rows."

U (FOUO) The decrypted text of part 3: "Slowly, desperatly[sic], slowly, the remains of passage debris that encumbered the lower part of the doorway was removed. With trembling hands I made a tiny breach in the upper left hand corner, and then, widening the hole a little, I inserted the candle and peered in. The hot air escaping from the chamber caused the flame to flicker, but presently, details of the room within emerged from the mist. Can you see anything? Q[sic]"

(FOUO) Although ideas abound, a successful break into part 4 has not been made, and analysts continue to work for a solution.

> Approved for Release by NSA on 05-21-2013 FOIA Case # 61191

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INTRODUCTION

The following paper will take a technical look at the solution to a major portion of the KRYPTOS sculpture located in the courtyard of the Central Intelligence Agency in Langley, Virginia. Before starting on the technical details, let's take a quick look at the history of the sculpture, as well as a few comments from the sculptor.

announced by the CIA to acquire art work for the new CIA Headquarters building. When the selection process had been completed, the Director of Central Intelligence approved the proposal submitted by James Sanborn, a Washington area artist, to create a two-part sculpture at the west entrance to the new Headquarters building, and in the courtyard of the complex. In the fall of 1990 the work was unveiled at a dedication ceremony at the CIA.

If (FOUO) According to Mr. Sanborn, "the stonework at the entrance and in the courtyard served two functions. First, it creates a natural framework for the project as a whole and is part of a landscaping scheme designed to recall the natural stone outcropping that existed on the site before the Agency, and that will endure as do mountains. Second, the tilted strata tell a story like pages of a document. Inserted between these stone "pages" is a flat copper sheet through which letters and symbols have been cut. This code, which includes certain ancient ciphers, begins as International Morse and increases in complexity as you move through the piece at the entrance and into the courtyard. Its placement in a geologic context reinforces the text's "hiddenness" as if it were a fossil or an image frozen in time."

(FOVO) This paper's purpose is to concentrate solely on the copper sheets located in the courtyard through which letters and question marks were cut out. It will look at the diagnosis, exploitation and eventual solution of the majority of the cipher contained in the sculpture.

Si h Ti is

Churc Star

DOCID: 4051151

THE KRYPTOS SCULPTURE

one half of the sculpture contains the following Vigenere square, which uses mixed sequences based on the keyword KRYPTOS.

```
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 A B C D
A KRYPTOS A B C D E F G H I J L M N Q U V W X Z K R Y P
BRYPTOSABCDEFGHIJLMNQUVWXZKRYPT
C Y P T O S A B C D E F G H I J L M N Q U V W X Z K R Y P T O
D P T O S A B C D E F G H I J L M N Q U V W X Z K R Y P T O S
E TOSABCDEFGHIJLMNQUVWXZKRYPTOSA
F O S A B C D E F G H I J L M N Q U V W X Z K R Y P T O S A B
G SABCDEFGHIJLMNQUVWXZKRYPTOSABC
H A B C D E F G H I J L M N Q U V W X Z K R Y P T O S A B C D
I BCDEFGHIJLMNQUVWXZKRYPTOSABCDE
J C D E F G H I J L M N Q U V W X Z K R Y P T O S A B C D E F
K D E F G H I J L M N Q U V W X Z K R Y P T O S A B C D E F G
L E F G H I J L M N Q U V W X Z K R Y P T O S A B C D E F G H
M F G H I J L M N Q U V W X Z K R Y P T O S A B C D E F G H I
N GHIJLMNQUVWXZKRYPTOSABCDEFGHIJ<u>L</u>
O HIJLMNQUVWXZKRYPTOSABCDEFGHIJL
PIJLMNQUVWXZKRYPTOSABCDEFGHIJLM
Q JLMNQUVWXZKRYPTOSABCDEFGHIJLMN
R L M N Q U V W X Z K R Y P T O S A B C D E F G H I J L M N Q
S M N Q U V W X Z K R Y P T O S A B C D E F G H I J L M N Q U
T NOUVWXZKRYPTOSABCDEFGHIJLMNQUV
U QUVWXZKRYPTOSABCDEFGHIJLMNQUVW
V U V W X Z K R Y P T O S A B C D E F G H I J L M N Q U V W X
W V W X Z K R Y P T O S A B C D E F G H I J L M N Q U V W X Z
X W X Z K R Y P T O S A B C D E F G H I J L M N Q U V W X Z K
Y X Z K R Y P T O S A B C D E F G H I J L M N Q U V W X Z K R
Z Z K R Y P T O S A B C D E F G H I J L M N Q U V W X Z K R Y
ABCDEFGHIJKLMNOPQRSTUVWXYZABCD
```

(FOUO)—The extra letter "L" at the end of the 15th line is as it appears in the sculpture. This Vigenere square will turn out to play a key role in reading 2 of the 3 cipher sections exploited by NSA analysts.

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(FOUO) Following is the other half of the main sculpture. Line numbers and underlining have been added for reference purposes only, and are not a part of the sculpture.

```
EMUFPHZLRFAXYUSDJKZLDKRNSHGNFIVJ
1
  YQTQUXQBQVYUVLLTREVJYQTMKYRDMFD
  V F P J U D E E H Z W E T Z Y V G W H K K Q E T G F Q J N C E
3
  G G W H K K ? D Q M C P F Q Z D Q M M I A G P F X H Q R L G
 TIMVMZJANQLVKQEDAGDVFRPJUNGEUNA
  Q Z G Z L E C G Y U X U E E N J T B J L B Q C R T B J D F H J R R
 YIZETKZEMVDUFKŠJHKFWHKUWQLSZFTI
  H H D D D U V H ? D W K B F U F P W N T D F I Y C U Q Z E R E
  EVLDKFEZMOQQJLTTUGSYQPFEUNLAVIDX
10 FLGGTEZ?FKZBSFDQVGOGIPUFXHHDRKF
11 FHQNTGPUAECNUVPDJMQCLQUMUNEDFQ
12 ELZZVRRGKFFVOEEXBDMVPNFQXEZLGRE
13 DNQFMPNZGLFLPMRJQYALMGNUVPDXVKP
14 DQUMEBEDMHDAFMJGZNUPLGEWJLLAETG
15 ENDYAHROHNLSRHEOCPTEOIBIDYSHNAIA
16 CHTNREYULDSLLSLLNOHSNOSMRWXMNE
17 TPRNGATIHNRARPESLNNELEBLPIIACAE
18 WMTWNDITEENRAHCTENEUDRETNHAEOE
19 TFOLSEDTIWENHAEIOYTEYQHEENCTAYCR
20 EIFTBRSPAMHHEWENATAMATEGYEERLB
21 TEEFOASFIOTUETUAEOTOARMAEERTNRTI
22 B S E D D N I A A H T T M S T E W P I E R O A G R I E W F E B
23 AECTDDHILCEIHSITEGOEAOSDDRYDLORIT
24 RKLMLEHAGTDHARDPNEOHMGFMFEUHE
25 ECDMRIPFEIMEHNLSSTTRTVDOHW?OBKR
26 UOXOGHULBSOLIFBBWFLRVQQPRNGKSSO
27 TWTQSJQSSEKZZWATJKLUDIAWINFBNYP
28 VTTMZFPKWGDKZXTJCDIGKUHUAUEKCAR
```

(FOUC) An initial look revealed a number of oddities. First was the inclusion of question marks. It was not known if these were being used to signify a transition from one cipher system to another, or if they acted as punctuation for the plaintext. Immediately after the halfway point was the word END which may be a coincidence or it might refer to the end of some cryptosystem. This was a distinct possibility because the Y, A, and R that followed END were actually raised slightly when compared to the surrounding letters, perhaps signaling the beginning of a different cryptosystem. All of these peculiarities would eventually be explained through the reading of the majority of the cipher.

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DIAGNOSIS

The initial diagnosis of this cipher revealed the probable use of at least 3 separate cryptographies. The main reason for this assumption was that beginning with line 15, and proceeding through to line 25, numerous analysts noticed that a frequency count of the letters observed would roughly match that of the English language. If lines 15-25 used some particular cryptosystem, then it was likely that another was used for lines 1-14 and yet another one used for lines 26-28. That would yield a probable minimum of 3 distinct cryptosystems in use.

(14) showed a particular roughness on a width of 8. The most common explanation for width roughness is that of a polyalphabetic substitution system. In such a system, a message is encrypted using multiple simple substitutions, employing each substitution in a predetermined order. In this particular case, the width of 8 is a probable indication of 8 cipher alphabets being used.

Here The second section was already partly diagnosed, based solely on analysts "eyeballing" the cipher. Statistical programs confirmed that this section had the characteristics of English plain text, though obviously mixed up in some manner. The most likely explanation for this is a transposition system, perhaps a keyed columnar transposition. In such a system, the plain text is inscribed horizontally into a matrix, normally a rectangle, and then the letters are extracted vertically, according to a predetermined sequence.

(C) C (S)

the data also revealed a bias in the third section at an interval of 7. There is no specific cryptography that would give such a result, but a number of them could yield such results under certain circumstances, some of which will be discussed in detail in a later section. After solution of other parts, we discovered that this section was actually the fourth part of the problem. Read on for how this was discovered.

(b)(1) (b)(3)-50 USC 403 (b)(3)-P.L. 86-36

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THE FIRST BREAKTHROUGH

Under the hypothesis that the first section employed a polyalphabetic substitution with 8 alphabets, a frequency count was done for each alphabet in the cipher. It was assumed that the alphabets were used in a sequential order, i.e., alphabet #1 was used to encipher characters number 1, 9, 17, 25, etc.; Alphabet #2 was used for characters 2, 10, 18, 26, etc.

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 - - 4 2 2 2 2 2 1 1 1 1 - 8 2 3 2 8 2 - 1 1 3 - 1 4 2 1 - 3 5 4 3 4 - 5 1 4 2 - - 2 3 3 1 1 3 1 3 - 1 2 3 - - 3 1 - 7 3 1 3 2 1 1 2 - - 10 2 1 3 1 3 1 3 1 1 4 1 1 3 - 3 1 2 - - 1 2 7 4 - 4 - 5 2 - - 4 7 2 - 2 1 3 3 1 1 1 3 1 2 2 1 1 2 2 1 - 4 7 9 1 1 1 1 1 1 6 2 - - - 4 1 - 1 4 - 1 3 1 5 - 2 - 1 6 4 2 3 1 - 3 6 1 - 1 1 1 1 5 2 9 - 2 - 3 - 1 2 1 6 3 7 3 - 2 6 1 5 1 1 2 4 - - 2 3 3 - 1 -

(3) Using the above frequency counts, it was hoped that one could place the alphabet sequence right on top of each row, though at some offset, and get something that would at least roughly match what you might expect to see. This did not lead to a hoped for solution. Since the accompanying Vigenere Square was based on the keyword KRYPTOS, the frequency counts were next sorted based on the same keyword mixed sequence.

 K
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 H
 I
 J
 L
 M
 N
 Q
 U
 V
 W
 X
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 1
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56 (5) Using the frequency count this way, it appeared possible to place a keyword mixed alphabet on at least some of these rows. In the third row for example, the following appeared to be a good alignment.

2 2 4 - 3 - 1 3 - - 3 1 - 7 3 1 3 1 1 2 101 3 1 1 1 L M N Q U V W X Z K R Y P T O S A B C D E F G H I J

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In the sixth row the following looked like a good alignment as well.

1 1 1 - 1 - 1 1 - - 4 7 9 1 1 1 1 6 2 - 4 4 - 1 3 5 Q U V W X Z K R Y P T O S A B C D E F G H I J L M N

Where needed, a solution was effected. Following are the plain alphabet, the 8 cipher alphabets, and a decryption of the text that was readable. Note two items: 1) there is a repeating key of ABSCISSA under the index letter of K in the plain alphabet, and; 2) the readable text actually begins with the cipher letter V at the beginning of the third line of the sculpture.

P: KRYPTOSABCDEFGHIJLMNQUVWXZ

C1: ABCDEFGHIJLMNQUVWXZKRYPTOS

C2: BCDEFGHIJLMNQUVWXZKRYPTOSA

C3: SABCDEFGHIJLMNQUVWXZKRYPTO

C4: CDEFGHIJLMNQUVWXZKRYPTOSAB

C5: IJLMNQUVWXZKRYPTOSABCDEFGH

C6: SABCDEFGHIJLMNQUVWXZKRYPTO

C7: SABCDEFGHIJLMNQUVWXZKRYPTO

C8: ABCDEFGHIJLMNQUVWXZKRYPTOS

VFPJUDEE HZWETZYV GWHKKQET GFQJNCEG GWHKK?DQM ITWASTOT ALLYINVI SIBLEHOW STHATPOS SIBLE?THE

CPFQZDQM MIAGPFXH QRLGTIMV MZJANQLV KQEDAGDV YUSEDTHE EARTHSMA GNETICFI ELDXTHEI NFORMATI

FRPJUNGE UNAQZGZL ECGYUXUE ENJTBJLB QCETBJDF ONWASGAT HEREDAND TRANSMIT TEDUNDER GROUNDTO

HRRYIZET KZEMVDUF KSJHKFWH KUWQLSZF TIHHDDDU ANUNKNOW NLOCATIO NXDOESLA NGLEYKNO WABOUTTH

VH?DWKBFU FPWNTDKI YCUQZERE EVLDKFEZ MOQQJLTT IS?THEYSH OULDITSB URIEDOUT THERESOM EWHEREXW

UGSYQPFE UNLAVIDX FLGGTEZ?F KZBSFDQV GOGIPUFX HOKNOWST HEEXACTL OCATION?O NLYWWTHI SWASHISL

HHDRKFFH QNTGPUAE CNUVPDJM QCLQUMUN EDFQELZZ ASTMESSA GEXTHIRT YEIGHTDE GREESFIF TYSEVENM

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VRRGKFFV OEEXBDMV PNFQXEZL GREDNQFM PNZGLFLP INUTESSI XPOINTFI VESECOND SNORTHSE VENTYSEV

MRJQYALM GNUVPDXV KPDQUMZB EDMHDAFM JGZNUPLG ENDEGREE SEIGHTMI NUTESFOR TYFOURSE CONDSWES

EWJLLAET G

Li (FOUC) Here is a more readable version, with punctuation added:

"IT WAS TOTALLY INVISIBLE. HOW'S THAT POSSIBLE? THEY USED THE EARTH'S MAGNETIC FIELD. THE INFORMATION WAS GATHERED AND TRANSMITTED UNDERGROUND TO AN UNKNOWN LOCATION. DOES LANGLEY KNOW ABOUT THIS? THEY SHOULD. ITS BURIED OUT THERE SOMEWHERE. WHO KNOWS THE EXACT LOCATION? ONLY W.W. THIS WAS HIS LAST TRANSMISSION. THIRTY-EIGHT DEGREES, FIFTY-SEVEN MINUTES, SIX POINT FIVE SECONDS NORTH. SEVENTY-SEVEN MINUTES, FORTY-FOUR SECONDS WEST. I.D. BY ROWS."

Ster, former director of the CIA. The coordinates given are a location within the CIA grounds, most likely the main complex or the courtyard area. The meaning of "I.D. BY ROWS" is not known at this time. The repeating key of ABSCISSA is defined by Webster's New World Dictionary as, "the horizontal Cartesian coordinate on a plane, measured from the y-axis along a line parallel with the x-axis to point P".

U_487 After reading this section, it became apparent that the sculpture contained a minimum of 4 parts with one preceding this polyalphabetic section (the first two lines), and two following. More on that a little later.

-CONFIDENTIAL//SI-

(b)(1) (b)(3)-50 USC 403 (b)(3)-P.L. 86-36 (b)(3)-18 USC 798

THE SECOND BREAKTHROUGH

(C//SI) 487 As stated earlier, the section that began at line 15 and most likely finished at line 25 (now referred to as section 3) was a probable transposition system.

Nonetheless, analysis continued.

(S) The attack that was eventually successful on this portion was one of cribbing by brute force. It was noted that there was a single occurrence of the letter Q, and just 5 occurrences of the letter U, a likely combination. The 3 or 4 letters surrounding the Q were paired with the corresponding letters surrounding each U. The results were as follows:

Y N YT YF YT YF TR TE $T \cdot I$ TU T M EE E N E O EE E F YY YE YT Y T YE QU QU QU QU QU HL H D HE HA HH E D E R ET EE EE E S E E .. E U E O EE NL NT NA NT NC

Though many wrong turns were taken, the third pair of columns proved correct and the letter T was placed in front of the HE, produced the word THE. The best combination that matched with the remainder was this:

L Y F E T I H E O A Y T G Q U T H E D E T H E U A N A

(S) Many of the trigraphs above looked plausible. Using the letter **G** in front of the **QU**, pairs of columns were cribbed to form **INGQU**, with the following alignment yielding the best looking results:

Sec /2 (1" - 3/1 - 1"

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O W L Y F A M E T I G T H E O R W A Y T I N G Q U E D T H E W I D E T F T H E U E E A N A

Continuing to use column matching with the remainder of the cipher, a solution was discovered that used an incompletely filled 4 X 86 matrix. That solution follows, but because the matrix is 86 columns wide, the representation has been split into two pieces:

SLOWLYDESPARATLYSLOWLYTHEREMAINSOFPASSAGEDE ASREMOVEDWITHTREMBLINGHANDSIMADEATINYBREACH OLEALITTLEIINSERTEDTHECANDLEANDPEEREDINTHEH FLICKERBUTPRESENTLYDETAILSOFTHEROOMWITHINEM

BRISTHATENCUMBEREDTHELOWERPARTOFTHEDOORWAYW INTHEUPPERLEFTHANDCORNERANDTHENWIDENINGTHEH OTAIRESCAPINGFROMTHECHAMBERCAUSEDTHEFLAMETO ERGEDFROMTHEMISTXCANYOUSEEANYTHINGO

Further, a very logical key was discovered. The cipher that started this section was from line 15:

ENDYAHROHNLSRHEOCPTEOIBIDYSHNAI

This section can be located in the recovered plaintext, and is inscribed in the matrix from bottom to top, beginning near the end of the message and proceeding towards the front of the message.

SLOWLYDESPARATLYSLOWLYTHEREMAINSOFPASSAGEDE ASREMOVEDWITHTREMBLINGHANDSIMADEATINYBREACH OLEALITTLEIINSERTEDTHECANDLEANDPEEREDINTHEH FLICKERBUTPRESENTLYDETAILSOFTHEROOMWITHINEM

1 1 1 9 8 7

SUSHER SPACE

DOCID: 4051151

BRISTHATENCUMBEREDTHELOWERPARTOFTHEDOORWAYW INTHEUPPERLEFTHANDCORNERANDTHENWIDENINGTHEH OTAIRESCAPINGFROMTHECHAMBERCAUSEDTHEFLAMETO ERGEDFROMTHEMISTXCANYOUSEEANYTHINGQ

6 5 4 3 2 1

Proceeding backwards in this manner and labeling each column with a number, it becomes obvious that there is indeed a "method to the madness". What follows is the label for each column written out in order, on a width of 7:

Looked at this way, the patterns within each of the 7 columns are plain, with the possible exception of the "86" at the bottom of the second column. Further, a common procedure in columnar transposition systems is to extract columns of the matrix in an order determined by a specific key, often denoted by a keyword to make the key easy to remember. To generate a numerical key based on a keyword of KRYPTOS for example, number the keyword based on alphabetical order:

K R Y P T O S 1 4 7 3 6 2 5

Note how a variation of **KRYPTOS** (spelled backwards and wrapped around the ends) fits the columns of the matrix:

801P1-10-3K1

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(FOUC) Although this may or may not be the way the system was originally set up by Sanborn, it is likely to be very close to the truth. The entire text of section 3 follows, with appropriate punctuation:

"SLOWLY DESPARATLY SLOWLY THE REMAINS OF PASSAGE DEBRIS THAT ENCUMBERED THE LOWER PART OF THE DOORWAY WAS REMOVED. WITH TREMBLING HANDS I MADE A TINY BREACH IN THE UPPER LEFT HAND CORNER, AND THEN, WIDENING THE HOLE A LITTLE, I INSERTED THE CANDLE AND PEERED IN. THE HOT AIR ESCAPING FROM THE CHAMBER CAUSED THE FLAME TO FLICKER, BUT PRESENTLY, DETAILS OF THE ROOM WITHIN EMERGED FROM THE MIST X CAN YOU SEE ANYTHING Q''

the last line, the X acts as a period, though other areas of the text should have used periods as well. The Q at the end of the text appears to act as a question mark, though the sculpture had a question mark that delineated the end of this section. Earlier, it was noted that in line 15 the Y, A, and R were slightly raised in relation to other surrounding letters. That had no affect on reading this section.

(Ecuo) If you have ever read about King Tut, the passage may have sounded familiar to you. It is a paraphrasing from the book "The Tomb of Tut-ankh-amen" written by Howard Carter.

CACALLY SPORCE

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THE THIRD BREAKTHROUGH

the last portion read was the first 2 lines of the cipher, section 1. A statistical analysis revealed that this section had width properties that were significant, similar to the first breakthrough, but this time on a width of 5, again implying a polyalphabetic system. Assuming another polyalphabetic system using 5 alphabets, the frequency count follows:

A	В	C	D	E	F	G	H	I	J	K	L	M	N	0	P	Q	R	S	T	U	V	W	X	Y	Z
																								-	
_	_	-	-	_	1	1	_	-	3	2	1	1	-	-	_	-	-	-	-	1	1	-	1	-	1
																								5	
_	_	-	_	_	2	_	_	-	-	_	_	_	1	-	_	3	3	-	-	2	-	-	-	-	1
_	1	_	1	1	1	_	_	1	-	_	1	_	_	-	1	_	-	2	2		1	_	-	_	_

As before, it was hoped that you could place another alphabet on top of these frequency counts, hopefully resulting in something that would match up nicely. Since the keyword-mixed alphabet based on KRYPTOS was used before, we expected that it might be a good choice here. Therefore, a frequency count based on that assumption is given below:

K	R	Y	P	T	0	S	A	B	C	D	E	F	G	H	I	J	L	M	N	Q	U	V	W	X	Z
-																									
																									1
1	1	5	_	1	_	_	-	_	_	1	_	_		_	-	-	1	_	1	_	1	-	-	1	-
_	3	-	-	_	-	-	-	-	_	-	-	2	-	-	-	-	_	_	1	3	2	-	-	_	1
_	-	-	1	2	_	2	-	1	_	1	1	1	_	_	1	_	1	-	_	_	-	1	-	_	-

The small number of characters made solution difficult in either case, but as before, analysis continued. Beginning with a likely starting point, the third alphabet with cipher value Y appearing 5 times was assumed to be a plain value E. Due to a higher occurrence of the more common letters, the output appeared to be better using the KRYPTOS alphabet, which results in the following:

```
EMUFP HZLRF AXYUS DJKZL DKRNS HGNFI VJYQT QUXQB
..T...S...E...I...D...B...E...G..

QVYUV LLTRE VJYQT MKYRD MFD
..E...N...E...L...N
```

fin (S) Through trial and error, another KRYPTOS alphabet was placed against the frequencies in the first alphabet, which

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yielded the following reasonable text patterns:

EMUFP HZLRF AXYUS DJKZL DKRNS HGNFI VJYQT QUXQB B.T.. E.K.. T.E.. A.C.. A.D.. E.Y.. N.E.. L.A..

QVYUV LLTRE VJYQT MKYRD MFD L.E.. H.G.. N.E.. I.E.. I.N

With those recoveries in place, further progress was soon made. It was noted that if the last 3 letters of plain were ION, then cipher VJYQT (which occurs twice) would become plain NCE..

EMUFP HZLRF AXYUS DJKZL DKRNS HGNFI VJYOT QUXQB BET. EMK. TLE. ACC. AND. ESY. NCE. LHA..

QVYUV LLTRE <u>VJYOT</u> MKYRD MFD LIE. HDG. NCE. INE. ION

While portions of the text seemed to have good recoveries, such as AND, NCE, LIE, and ION, other portions appeared less encouraging, like EMK, and HDG. Further scrutiny revealed that the "good" recoveries occurred in every other group of 5 letters. Using 10 alphabets instead of 5 would eliminate the "bad" recoveries. Looking back at the width statistics, width 10 had also scored high, and the width of 5 was probably a reflection of that.

EMUFPHZLRF AXYUSDJKZL DKRNSHGNFI VJYQTQUXQB
BET..... TLE..... AND...... NCE......
OVYUVLLTRE VJYOTMKYRD MFD

LIE..... NCE..... ION

Evaluating this new approach, it seemed that the end of the text should be **TION** or **SION**, and that the 2 occurrences of **NCE** would be preceded by a vowel. The following alignment of the tenth alphabet provided that:

EMUFPHZLRF AXYUSDJKZL DKRNSHGNFI VJYQTQUXQB
BET....B TLE....G AND....E NCE....T

QVYUVLLTRE VJYQTMKYRD MFD LIE..... NCE..... S ION

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(S) Notice that the 2 occurrences of NCE are preceded by E and A, exactly as expected. Further cribbing ensued, which eventually yielded the following set of alphabets and the following decryption:

P: K R Y P T O S A B C D E F G H I J L M N Q U V W X Z

C1: P T O S A B C D E F G H I J L M N Q U V W X Z K R Y

C2: A B C D E F G H I J L M N Q U V W X Z K R Y P T O S

C3: L M N Q U V W X Z K R Y P T O S A B C D E F G H I J

C4: L J L M N Q U V W X Z K R Y P T O S A B C D E F G H I J

C5: M N Q U V W X Z K R Y P T O S A B C D E F G H I J L

C6: P T O S A B C D E F G H I J L M N Q U V W X Z K R Y

C7: S A B C D E F G H I J L M N Q U V W X Z K R Y

C7: S A B C D E F G H I J L M N Q U V W X Z K R Y P T O

C8: E F G H I J L M N Q U V W X Z K R Y P T O

C10: T O S A B C D E F G H I J L M N Q U V W X Z K R Y P T O

EMUFP HZLRF AXYUS DJKZL DKRNS HGNFI VJYQT QUXQB
BETWE ENSUB TLESH ADING ANDTH ABSCE NCEOF LIGHT

QVYUV LLTRE VJYQT MKYRD MFD LIEST HENUA NCEOF IQLUS ION

(FOUO) Respaced and punctuated, it reads:

"BETWEEN SUBTLE SHADING AND THE ABSENCE OF LIGHT LIES THE NUANCE OF ILLUSION"

(FOUR) In the original decrypt, the word ILLUSION was misspelled as IQLUSION. The source of this quote is currently unknown. The repeating key of PALIMPSEST, below the index letter K, has a very interesting definition when viewed in conjunction with the sculpture. It is defined by Webster's New World Dictionary as, "a parchment, tablet, etc., that has been written upon or inscribed two or three times, the previous text or texts having been imperfectly erased and remaining, therefore, still partly visible". Another definition from Webster's Third New International Dictionary is "a memorial brass having earlier engraving on the side opposite to that which is exposed".

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THE FOURTH BREAKTHROUGH??

Unfortunately, a fourth breakthrough has not yet occurred. There are only 97 characters remaining in section 4, but the first section contained just 63 characters and was exploited, meaning a solution is certainly possible, depending on the cryptosystem. A statistical analysis of this portion showed some roughness on interval 7. This could be a characteristic of plaintext auto-key, if the alphabet used has a high frequency letter assigned the value of 0. Another hypothesis is that this last section employs both of the systems already used. First the message is encrypted using some set of alphabets, as was done in the first and third breakthroughs, and then the cipher is put through a transposition, such as that used in the second breakthrough. If the original text had a repeat at a distance of 7 apart (or perhaps 14 or even 21 apart), then after transposing the text, the repeat would now show up in the interval statistic rather than the width statistic.

There is no solution at the current time, although some attempts have been made using plaintext auto-key and other attempts using transposed substitution as the enciphering mechanism.

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RECAP

(FOUT) The first section that reads are the first 2 full lines of cipher, a total of 63 characters. The cryptography is a periodic polyalphabetic substitution system employing 10 alphabets. The plain and cipher components are both a keyword mixed sequence based on KRYPTOS, using a repeating key of PALIMPSEST below the index letter K. The plaintext reads:

"BETWEEN SUBTLE SHADING AND THE ABSENCE OF LIGHT LIES THE NUANCE OF ILLUSION"

(F900) The second part reads using the cipher from lines 3-14, a total of 370 characters. The cryptography is another periodic polyalphabetic substitution, employing 8 alphabets. The plain and cipher components are both a keyword mixed sequence based on KRYPTOS, using a repeating key of ABSCISSA below the index letter K. The plaintext reads:

"IT WAS TOTALLY INVISIBLE. HOW'S THAT POSSIBLE? THEY USED THE EARTH'S MAGNETIC FIELD. THE INFORMATION WAS GATHERED AND TRANS-MITTED UNDERGROUND TO AN UNKNOWN LOCATION. DOES LANGLEY KNOW ABOUT THIS? THEY SHOULD. ITS BURIED OUT THERE SOMEWHERE. WHO KNOWS THE EXACT LOCATION? ONLY W.W. THIS WAS HIS LAST TRANSMISSION. THIRTY-EIGHT DEGREES, FIFTY-SEVEN MINUTES, SIX POINT FIVE SECONDS NORTH. SEVENTY-SEVEN MINUTES, FORTY-FOUR SECONDS WEST. I.D. BY ROWS."

(Fetio) The third section uses the cipher contained in lines 14 through the question mark in line 25. The cryptography is a keyed columnar transposition. The matrix is an incompletely filled 4 X 86, using a key of KRYPTOS that has been numerically keyed and repeated 13 times. The plaintext reads:

"SLOWLY DESPARATELY SLOWLY THE REMAINS OF PASSAGE DEBRIS THAT ENCUMBERED THE LOWER PART OF THE DOORWAY WAS REMOVED. WITH TREMBLING HANDS I MADE A TINY BREACH IN THE UPPER LEFT HAND CORNER, AND THEN, WIDENING THE HOLE A LITTLE, I INSERTED THE CANDLE AND PEERED IN. THE HOT AIR ESCAPING FROM THE CHAMBER CAUSED THE FLAME TO FLICKER, BUT PRESENTLY, DETAILS OF THE ROOM WITHIN EMERGED FROM THE MIST. CAN YOU SEE ANYTHING?"

(FOUÓ) The fourth part has not been read, but most likely uses the last 4 characters of line 25, as well as the cipher in lines 26-28, for a total of 97 characters. It is highly probable

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that **KRYPTOS** plays an integral part in the solution, as it did in the 3 parts that have been exploited.

\$4 5 mm

OCCID: -4110824 KRYPTOS SCULPTURE

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BELOW IS THE COMPLETE AND CORRECT TEXT OF THE CRYPTOGRAM. THE LETTERS ARE RUN TOGETHER IN THE ORIGINAL. BUT ARE ON THE LINES(ROWS) SHOWN. THE BOLD/ITALIC CHARACTERS ARE CORRECTIONS TO PREVIOUSLY PUBLISHED VERSIONS (ONE IN KRYTTTOS NEWSLETTER. ONE IN THE "CRIB" NEWSLETTER) WHICH HAD GARBLES. THANKS TO

DF CIA FOR HIS ASSISTANCE IN VERIFYING THE TEXT. THERE ARE 28 ROWS AND FROM 29 TO 33 CHARS IN A GIVEN ROW. THERE ARE A TOTAL OF 869 CHARS (INCLUDING FOUR ?s). THE FREQ COUNT IS:

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? 40 19 18 48 83 43 34 40 33 19 27 42 32 42 26 27 34 42 28 53 34 24 21 12 20 24 4

> (b) (3) OGA

5 10 15 20 25 30

01 EMUFP HZLRF AXYUS DJKZL DKRNS HGNFI VJ

CIA

02|YQTQU XQBQV YUVLL TREVJ YQTMK YRDMF D

03 VFPJU DEEHZ WETZY VGWHK KQETG FQJNC E

04|GGWHK K?DQM CPFQZ DQMMI AGPFX HQRLG

05 TIMVM ZJANQ LVKQE DAGDV FRPJU NGEUN A

06|QZGZL ECGYU XUEEN JTBJL BQCRT BJDFH RR

07|YIZET KZEMV DUFKS JHKFW HKUWQ LSZFT I

08|HHDDD UVH?D WKBFU FPWNT DFIYC UQZER E

09|EVLDK FEZMO QQJLT TUGSY QPFEU NLAVI DX

10|FLGGT EZ?FK ZBSFD QVGOG IPUFX HHDRK F

11|FHQNT GPUAE CNUVP DJMQC LQUMU NEDFQ

12|ELZZV RRGKF FVOEE ABDMV PNFQX EZLGR E

13|DNQFM PNZGL FLPMR JQYAL MGNUV PDXVK P

14 DQUME BEDMH DAFMJ GZNUP LGEWJ LLAET G

Approved for Release by NSA on 04-14-2014, FOIA Case # 62223

DOCID: 4110824 SCULPTURE

15 ENDYA HROHN LSRHE OCPTE OIBID YSHN	A IA
16 CHTNR EYULD SLLSL LNOHS NOSMR WXM	ΝE
17 TPRNG ATIHN RARPE SLNNE LEBLP HACA	A E
18 WMTWN DITEE NRAHC TENEU DRETN HAEO	E .
19 TFOLS EDTIW ENHAE IOYTE YQHEE NCTA	Y CR
20 EIFTB RSPAM HHEWE NATAM ATEGY EERL	_B.
21 TEEFO ASFIO TUETU AEOTO ARMAE ERTN	NR TI
22 BSEDD NIA4H TTMST EWPIE ROAGR IEWF	E B
23 AECTD DHILC EIHSI TEGOE AOSDD RYDL	O RIT
24 RKLML EHAGT DHARD PNEOH MGFMF EUH	E
25 ECDMR IPFEI MEHNL SST7R TVDOH W?OF	BK R
26 UOXOG HULBS OLIFB BWFLR VQQPR NGKS	SS O
27 TWTQS JQSSE KZZWA. TJKLU DIAWI NFBN	IY P
28; VTTMZ FPKWG DKZXT JCDIG KUHUA UEKC	A R

THE FOLLOWING IS THE SETUP OF THE VIGENERE SQUARE, NOTE THAT IT IS SOMEWHAT IRREGULAR IN CONSTRUCTION IN THAT THE FIRST FOUR CHARS IN EACH ROW ARE REPEATED AT THE END OF THE ROW, ALSO NOTE THAT AT THE END OF THE "N" ROW FIVE CHARS ARE REPEATED (THERE IS AN EXTRA L.). THIS IS THE ONLY SUCH ROW, POSSIBLY IT WAS AN ERROR, THE UNDERLINE SHOWS WHERE THE UPPER AND LOWER COPPER PLATES ARE BOLTED

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KRYPTOS SCULPTURE

TOGETHER.

\ ABCDEFGHIJKLMNOPQRSTUVWXYZABCD

A KRYPTOSABCDEFGHIJLMNOUVWXZKRYP B RYPTOSABCDEFGHIJLMNOUVWXZKRYPT C YPTOSABCDEFGHIJLMNOUVWXZKRYPTO D PTOSABCDEFGHIJLMNQUVWXZKRYPTOS E TOSABCDEFGHIJLMNQUVWXZKRYPTOSA F O S A B C D E F G H I J L M N Q U V W X Z K R Y P T O S A B G SABCDEFGHIJLMNQUVWXZKRYPTOSABC H ABCDEFGHIJLMNOUVWXZKRYPTOSABCD I BCDEFGHIJLMNOUVWXZKRYPTOSABCDE J CDEFGHIJLMNQUVWXZKRYPTOSABCDEF K DEFGHIJLMNOUVWXZKRYPTOSABCDEFG L EFGHIJLMNOUVWXZKRYPTOSABCDEFGH MFGHIJLMNOUVWXZKRYPTOSABCDEFGHI N GHIJLMNQUVWXZKRYPTOSABCDEFGHIJL O HIJLMNOUVWXZKRYPTOSABCDEFGHIJL P IJLMNOUVWXZKRYPTOSABCDEFGHIJLM -O JLMNOUVWXZKRYPTOSABCDEFGH I JLMN R LMNOUVWXZKRYPTOSABCDEFGHIJLMNO S MNOUVWXZKRYPTOSABCDEFGHIJLMNOU TNQUVWXZKRYPTOSABCDEFGHIJLMNQUV UQUVWXZKRYPTOSABCDEFGHIJLMNQUVW V U V W X Z K R Y P T O S A B C D E F G H I J L M N Q U V W X WVWXZKRYPTOSABCDEFGH I JLMNQUVWXZ X WXZKRYPTOSABCDEFGH I JLMNOUVWXZK Y XZKRYPTOSABCDEFGH I JLMNOUVWXZKR Z ZKRYPTOSABCDEFGH I JLMNOUVWXZKRY

/ ABCDEFGHIJKLMNOPQ RSTUVWX YZAB CD

(b) (3)-P.L. 86-36

OTHER IN	PORTANT INFORMATION A	AND BACKGROUND IS CON-
TAINED IN THE ABOV	E MENTIONED ARTICLES BY	B82, 963-4179s
AND BY	A54, 963-1873s.	

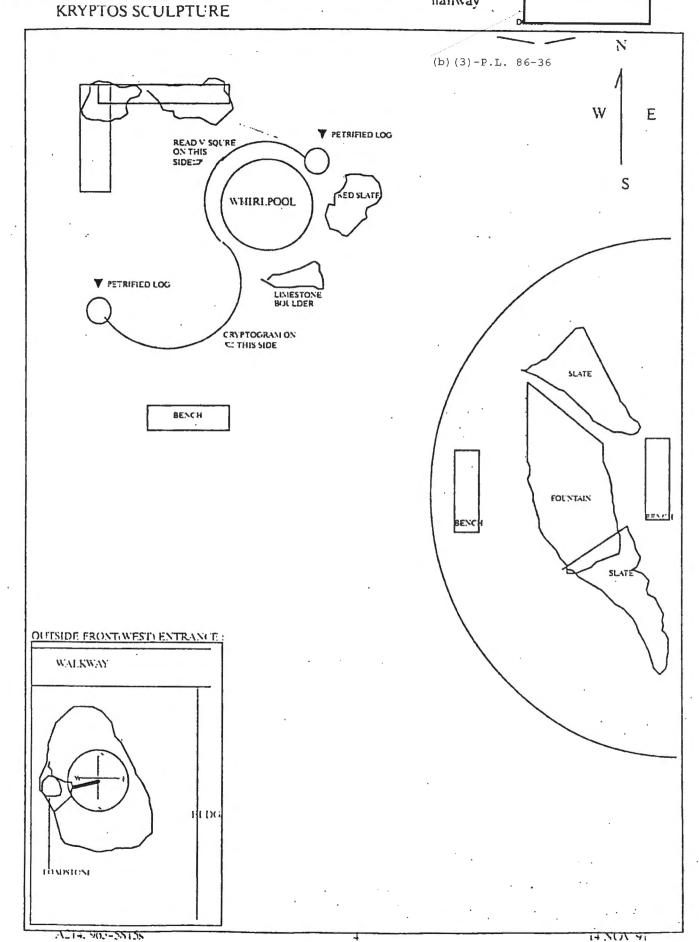
BELOW IS A DIAGRAM OF THE CIA COURTYARD WHERE THE SCULPTURE IS LOCATED AND THE COMPASS ETCHING WHICH IS LOCATED AT THE ENTRANCE TO THE "NEW" BUILDING.

I WOULD BE GREATLY INTERESTED TO HEAR ANY SUGGESTIONS.
OR OF ANY ATTACKS OR PROGRESS MADE BY ANYONE ON THIS MESSAGE.
THANKS AND GOOD LUCK.

PAUŁ

DOCID: 4110824

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A CIA Sculpture Study Group

For all interested persons

Friday 13 December 1991 at 1400 in CR 3W\$83

the First informal meeting to compare notes, information, and ideas will be held.

Among those expected to affend are

(b) (3)-P.L. 86-36

and others

Approved for Release by NSA on 04-14-2014. FOIA Case # 62223

For Further information

call

, A214, 963-5815

DOCID: 4112086

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TO= 14. Sters

18 November 1991

MEMORANDUM FOR: CRYPTO Novices Everywhers

FROM: George C. Dalmas > 27A EMARL

(A214,5815s)

SUBJECT: The CIA Courtyard MRYPTOS Puzzle

There it is again, another newspaper article about that CTA Courtyard KPYPTOS Puzzle. Let's see if this one has anything new to say.

CIA OGA (b)(3)

From the Associated Press in Washington it reads:

The new \$2.0,000 sculpture decorating the inner courtyard at CIA headquarters contains a secret, coded essage so difficult to unsprabble that it's spooking the spy agency's smartest specks!

Soulptor Jim Sanborn wrote the message but stead?astly refuses to divulge its contents. He says the text is known only to himself and CIA Director William Webster, and neither is talking.

Samborn's encrypted brain-teaser contains about 2,000 letters on the curving copper plates of his outdoor sculpture, "KRYFTOS." The work was erected outside the mirrored windows of the CIA employee cafeteria, offering a tantalizing challenge to the lunchtime providinside.

"Everyone wants to know what it says," Sanborn says. "They're out there all the time. There are groups of dark-suited people pointing at it and getting down on their knees trying to figure out what it says. Some take photographs. One say copied the whole thing down with pencil and paper."

Months ago, as rumors of the mystery sculpture swept through the corridors of the CIA's wooded enclave in suburban Langley, Va., police caught two men climbing ladders outside Santorn's Washington studio trying to photograph the inscription through his windows.

Samborn says "a friend of a friend" told him recently that frustrated CIA operatives sent a copy of the coded message to their arch rivals at the National Security Agency to run through their ultra-smart Cray supertraputer.

The sculptor, a big, bearded 45-year-old who wears aviator's sunglasses, talks freely about his other works, which have been exhibited at the Smithsonian's Hirshhorn Museum and the Corporan Gallery of Art in Washington.

However, when he discusses "Kryptos" -- which is Greek for

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"hidden" -- Samborn retreats behind the cautious, elliptical speech of semebody who's trying to hide something.

He said the sculpture's message deals on several levels with the CIA's tradition of secrecy. He hints that it was a "collaborative project," possibly written with the help of a prominent spy novelist, but he wouldn't els crate.

The inscription includes a Vigenore table, a system of ciphers devised by the 16th-century French cryptographer Blaise de Vigenere, and a Vigenere-occed message that Sanborn says an expert can decipher in a few hours.

The rest of the message, contained in the lower quadrant, is "a whole different ball game" of multiple codes, Samborn said. It was written by a retired CIA cryptographer whom the soulptor refuses to identify.

They conducted business only at secret locations, never by telephone or in writing.

"He developed something that really stumped them out there," Samborn said. "Parts can be deciphered in a matter of weeks or months, but other parts might never be deciphered without the knowledge that Webster has. He has the key to the code, and he can easily figure the whole thing."

Samborn knew he'd have to share his secret with a CIA confidente.

"Their business is to gather information," he said, "and if they don't know what's going on in their own back yard, how would anyone believe they'd know what was going on in the rest of the world?"

So when the sculpture was dedicated in November 1990, Samborn handed Webster two sealed envelopes. One contained the translation of the message. The other contained the keywords required to break the code.

PAGE 4

For those of you dishards who build like to beat but the Intelligence Community's experts and solve KRYPTOS first, I've provided for your entertainment all the clues and information I could find.

There are four clues the public designer left to be investigated: a sculpture containing the cipeer text and code text, a magnetic loadstone which makes a concass point south, a 106 character Morse code message, and two benches near the/lily good.

TOPE?

- 1) The cipher and code sculpture is very incressive. The cipher text is a half-inch sheet of copper plate that measures 8 feet by 8 feet and is curved to form a "(". The code text is also a half-inch sheet of copper plate that measures 8 feet by 8 feet and is curved to form a ")". They both stand end to end and from above they form a "S". Next to this giant "S" shape is a 12 foot high patrified tree trunk and a small fountain.
- 2) The compass and loadstone have an interesting orientation. The loadstone is magnetic, making a compass point to it. The compass is carved in a large flat stone next to the loadstone. The compass points South-by-SouthWest.
- 3) The New Headquarters Euilding (NHE) entrance has a 105 character Morse code message carved into the large flat half-inch thick copper plates.
- 4) Near the cipher and code sculpture are two wocden benches on apposite sides of a small lily pond. One faces North the other faces South. The benches are of normal constriction with no special markings. The lily pond and stonework contain no special signs or symbols.

Taking each of these four clues in turn may help bring together enough ideas from the puzzle guru conversation pit to le; a foundation for solving the five parts of this puzzle. The quest is to find the elusive plain text keys. This endeavor may actually solve the puzzle and perhaps reveal the useful message it contains.

Here are some of the clues that were recently learned about the code text.

869

The 978 characters in the code text contain 4 "?". The theory is that these divide the puzzle into 5 paragraphs. Each paragraph seems to be encoded in a different cryptographic method.

Important to deciphering any of the five paragraphs is the following fact: the English language has a usage frequency pattern. The four groups from most to least usage are: ETAOINS HADLUCK PEWYYB GJQKXZ.

The first paragraph (P-1) seems to be a digraph, a two-character system where each character represents two characters, or where two characters combine to mean one symbol.

EMUFPHZLRFAXYUSDJKZLDKRNSHGNFIVJ. YQTQUXQBQVYUVLLTREVJYQTMKYRDMFD 7FPJUDEIHZWETZYVGWHKKQETGFQJNCE GGWHKK?

The second paragraph (P-2) seems to be a polyalphabetic system con aining as many as 8 different alphabetic sets with perhaps 2 codes for each alphabetic.

D Q M C F F Q Z D Q M M I A G P F X H Q R L G
T I M V M Z J A N Q L V K Q E D A G D V F R P J U N G E ' N A
Q Z G Z L E C G Y U X U E E N J T B J L B Q C R T B J D 1 H R R
Y I Z E T K Z E M V D U F K S J H K F W H K U W Q L f Z F T I
H H D D D U V H ?

The third paragraph (P-3) seems be a transpositional system where the letters are expanded to form a grid or matrix.

DWKBFUFPWNTDFIYCUQZERE EYLDKFEZMOQQJLTTUGSYQPFEUNLAVIDX FLGGTEZ? The forth paragraph (P-4) seems to be a completely random system using a one-time code. This part is very difficult to break. A. brute force method using a computer may be necessary.

FKZBSFDOVGOGIPUFXHHDRKF FHQNTGPUAECNUVPDJMQCLQUMUNE D GKFFVOEEXBDMVPNFQXEZLGRE ZGLFL PMRJQYALMGNU DNOFMPN DQUMEBEDMHDAFMJGZNUPLGEWJLLAETG ENDYAHROHNLSRHEOCPTEOIBIDYSHNAI& C H T N R E Y U L D S L L S L L N O H S N O S M R W X M N I RNGATIHNRARPESLNNELEBLPI VALET CHAR WMTWNDITMEENRAHCTENEUDRETNHAEOE EIFTBRSPAMHNEWENATAMATEGYEERLB E F O A S F I O T U E T U A E O T O A R M A E E R T N R T I ESEDDNIAAHTTMSTEWPIEROAGRIEWFEB A E C T D D H I L C E I H S I T E G O E A O S D D R Y D L O R I T RKLMLEHAGTDHARDPNEOHMGFMFEUHE ECDMRIPFEIMEHNLSSTTRTVDOHW?

> The fifth paragraph (P-5) seems to be a yet-undefined system that may require an unusual plain-text key. This part may be unbreakable.

OSKR UOXOGHULBSOLIFBBWFLRVQQPRNGK.SSO TWTQSJQSSEKZZWATJKLUDIAWINFBNYP V T T M Z F P K W G D K Z X T J C D I G K U H U A U E K C A R

L. Eligibe.

Lets acve for new to the ciphe text. As you know without the correct plain text key the cipher text cannot unlock the code text.

Here are some of the clues that were recently learned about the cipher text.

The 866 characters in the code text contain no "?". The theory is that there may be a line by line relationship. There might even be a crossword puzzle relationship.

Here are the 28 lines of cipher text.

2 lines have 30 characters 25 lines have 31 characters

28 lines 866 characters

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 A B C D A K R Y P T O S A B C D E F G H I J , M N Q U V W X Z BRYPTOSABCDEFGHIJLMN.Q CYPTOSAECDEFGHIJLMNQU V AECDEFGHIJLMNQU SABCDEFGH IJL MN Ū 0 ABCDEFGHIJLMNQU HABCDEFGHIJLMNQUV JCDEFGHIJLHNQ UVWX KVUD X R LMNQUV K 2 T OSABCDEFG PT X K R OSABCDEFGH RYPTOSABCDEFGHIJLMN M N Q U V W X Z K R Y P T C S A B C D E F G H I J L M N Q XZKRYPT OSABCDEFGHI T 0 SABCDEFGHI XZKRYPT OSABCDEFGHIJ ZKRYPTOSABCDEFGHIJ Z K R Y P T O S A B C D E F G H I J L M N Q U V OSABCDEFGHIJLHNQ OSABCDEFGHIJLMNQUVW RYPT CSABCDEFGHIJLMNQUVWXZKRY J K L M N G P Q R S T U V W X Y Z A B C D

extre"L"

La Vingella
Let's move on now to the 105-character Morse code mussage.

Here are some of the clues that were recently learned about the Morse code message.

As you know international Morse code follows a standard representation. For example SOS in Morse code is: 000 --- 000

Notice that SOS read backwards is SOS. Another example of a palindrone is LEVEL. The longest palindrone is: a man, a plan, a canal, panama! If converted to Morse code that message would read the same if decoded ---> (right) as well as <--- (left).

International Morse Code is as follows:

A	0-	J	0	S	000
В	-000	K	-0-	T	_
C	-0-0	L	0-00	U	00-
D	-00	H		V	000-
E	o .	N	-0	W	0
F	00-0	0		X	-00-
G	0	P	00	Y	-0
H	0000	Q		2	-÷00
· I	00 .	R	0-0		

1 0	6 -0000
2 00	7 200
3 000	822
4 2000-	9 9
5 20000	0

The Morse Code section of our puzzle, the direction of which is not discernible given its position lying flat on the ground and approachable from all sides is as follows:

1										٠.		PAÇE 10	3
330		CC-3	N T	co I I	0 W I G 1	D 0	0-		٠.				->
T.	00 - I I I T		I E	0-0 F R R	P P	9-3 R R	0 - E T E T	0- 0 A I	0			<	->
2	. U	0	. ұ.	S S	CO -					•		<-	
	S A (T	oo oo I S I S	0 0	5 5	· ɔ					 <-	
S	0	S										 <-	->
0 E E	Ā 6	C-00 F L	26-0 F L	N	D '	T R	I	-000 B V	E E	0 E E			->
0 (1) (1)	00-3 L L	-200 E .	I I	oco o S S	0 -0 I I	A N 00 0-	00 I <u>I</u>	0 0 0 0 0	3 3	0 E E	O E E		->
0 E F	E W	0	D	-o : A A	H	000 S S	0 0 E E E E	0 E E		•		 <-	->
0 11 0	0 0 E E E	0 0 0 0 0 0	200 S S	0 0- E 0	o- o	R	o- 0 0	F F		•			->
0 11 11	0 0 E E E S	0 0 0	I		U	C-0 '							>
0	o-	o-0	0	o	¥								>

And here is one solution to the Morse code puzzle:

DIGITAL INTERPRET AT IT TIS YOUR POSITION SOS VIRTUALLY
AND INVISIBLE SHADOW FORCES LUCID MEMORY RY

if CIA art is a theme or scure of clues for the plain-text key, the perhaps the five main art objects found in the CIA foyer contain some text that can be used as a key to one or more of the five paragraphs.

The five major art objects that stand as moments and could be considered good plain-text key sources are: 14 brass nameplates, a statue, a biblical quotation, a wall bust, and a book of names.

1- brassname plates, each bearing a former CIA director's name. read:

William Joseph Conovan
Sidney William Souers
Hoyt Sanford Vandenberg
Roscoe Henry Hillenkoetter
Walter Eedell Suith
Allen Welsh Dulles
John Alex McCone
William Francis Rabern
Richard Helms
James R Schlesinger
William E Colby
George Bush
Stansfield Turner
William J Casey

The statue reads:

Founding Father
Major General
William J Donovan
Director Office of Strategic Services
Forerunner of the CIA

The biblical quotation on the wall reads:

And Ye Shall Know The Truth
And The Truth Shall Make You Free
John VII-XXXII

The marble bust reads:

Allen Welsh Dulles
Director of Central Intelligence:
1953-1961
His Monument is Around Us

The Original Headquarters Building (OHB) entrance contains a book that is on display to (veryone who colors. This book contains 23 of the 53 manes of all CIA agents that died in service. Note that 30 of these agents are not maned and still remain a secret.

In Honor of Those Members of The CIA

```
.. 1951 * Jerome ? Ginley
  1956 * William P Boteler
  1956 * Howard Carey
  1956 * Frank G Grace Jr
  1956 * Wilturn S Rose
  1961 * Nels L Benson
  1961 .*
 . 1951
  1951 *
  1964 * Johr G Kerriman
  1955 *
   1965
  1965 * Buster Edens
  1955 *
           Edward Johnson
  1965 *
  1965 *
   1965 * John W Waltz
   1956 * Lcuisa & O'Jibway
   1967 * Walter L Ray
   1968 # Billy Jack Johnson
   1958 *
          Jack Weeks
```

```
William E Bennett
         Richard S Welch
1978
1978
1983
1983
         Rotert C Ames .
1983
1983
1983
1983
1983
1984
         Scott J Vanlieshout
198#
         Curtis R Wood
1984
1985 * William F Buckley
1987
         Richard D Krobock
```

1988

Now for the most difficult part. Did the artist give you all the parts needed to solve the purple within the purple of the you extract plain text keys from surrounding sources?

Mist pryptograms have three parts, a code ext. 1 digher text, and the plain text.

Below is a simple cryptogram, which may be fun for movices Address as well as experienced "orippies." Here is the code text:

CUM TUTME TUEKETH EMURETE, QREMT RY C NUESCHUL CACO RY

NHEKET, ITCQ, CIP VMJIG.

plain text: CRYPTOGAHBDEFIUKLYNGSUVWYE plain text: AECDEFGHIUKLYNGFQRSTUVWYYE

In the example above OJM scalls FOR. Try to complete the message.

Did you know that...

- 0.7	 	 	 _		-

Here are some contributions from the popular conversation pits that may provide more clues to some plain text sources.

The number 866 might be a clue to P-1 What happened in August 1956? Louisa?

Invisible forces might mean "spies" indicating the book of mames.

The words "copper", "petrified", "wood", "water", "bench", "compass", "loadstone", and "granite" may be important.

The digraph code in P-1 may use "NS" or "EW" for North-South and East-West.

The 23 mames could make up the 8 alphabets for F-2.

All the characters in the 23 mases might be a matrix for P-3.

The first character of each of the 23 mases might be the odde to the random part of P-4.

And finally, humaingbirds never redeater the words to songs.

(b) (3) OGA

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	113A Satures towned at CH
11	USA Stone tomes at CH (who (wester the Replex down w/ year & paper)
Dec 91	USA analysis get to getter to tack about XXVP185
	USA ampto gat together to tree about KRYPTOS Acrepture, so justice step (intere cipileo)
	No one got anywhere.
91/92	CIA die werk on the sculpture (W/ so success)
- 1	/(b)(3)-P.L. 86-36
	C/A Churge ??
1	
	Within the Cencer of Laguny Las Ve first hear
2 ceks later	3/4 parts had
	andepto ment w/ to expens low few lat done
	(wasted 100% so 89%
	hading prese was done!
	Approved for Release by NSA on 05-21-2013, FOIA Case
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