REF ID:A64567

~~CONFIDENTIAL~~

NATIONAL SECURITY AGENCY
Washington 25, D. C.

COURSE	Military Cryptanalysis, Part I
LESSON 8	Monoalphabetic substitution with irregular-length cipher units: monome-dinome systems and others
TEXT ASSIGNMENT	Section X

1. Solve the following monome-dinome cryptogram and recover the original matrix:

78131 76784 31174 50078 76343 47807
41346 53334 01331 01799 78318 76441
31917 92478 74179 10834 76033 55723
40178 31347 46554 65323 41305 86131
34767 30345 77787 48763 77689 76072
76747 88123 11278 31788 76503 47753
17807 67921 07276 07310 17997 88878
74703 05323 15777 71034 76371 33764
47117 37607 88390 00666 33300 03985
79531 31533 78342 47800 17230 75560
34850 74547 83189

Declassified and approved for release by NSA on 01-31-2014 pursuant to E.O. 13526

~~CONFIDENTIAL~~

2. The following monome-dinome cryptogram is believed to contain the probable word "DIVISION". Solve the text and recover the original matrix:

17832 00066 16927 80635 28420 04596
95220 01900 21500 40563 26746 12576
80705 88123 53921 31118 13281 29159
46465 61576 52844 90033 94526 59400
25284 30032 00457 80758 80707 00526
73941 20854 56640 59352 91625 97612
46977 89125 05945 22008 41401 51129
31702 91067 53763 59062 38071 67003
84670 04267 78579 20084 17919 60266
43595 65697 00036 12004 97616 87202
60045 70787 05971 26122 81200 19003
00841 76912 09599 72673

3. The following cryptogram was intercepted on a link which has been known to be passing traffic in two different monome-dinome systems, one involving a matrix of the type shown in Fig. 75 of the text, the other involving a matrix of the type in Fig. 77. Solve the text of the message and recover the original matrix.

47631 82870 14628 31274 12741 16263
16054 63152 84662 60736 97728 46198
46972 13808 46287 46364 83788 72846
60846 28738 27578 87073 18279 62736
97462 83107 36977 45636 26962 73168
62763 12138 08462 87316 06379 82647
28467

~~CONFIDENTIAL~~

4. The following messages, intercepted on a link known to be passing monome-dinome traffic, are believed to be isologs. Solve the texts and recover the original matrices.

Message "A"

94872 33935 61227 89316 23405 09079
43810 57678 93386 41999 83809 08334
94194 76279 99496 30576 79199 54343
57683 04186 07981 43349 83529 09638

Message "B"

94378 11935 62887 39326 81405 09079
41320 57673 93136 41999 81309 03114
94194 76879 99496 10576 79199 54343
57631 04136 07982 43149 31589 09613

~~CONFIDENTIAL~~

5. The following messages are believed to be isologous monome-dinome ciphers. Solve the texts and recover the original matrices:

Message "A"

73507 09885 01652 37531 09804 39858
14983 12316 52371 12890 93312 42689
30741 59012 54398 50563 98460 77297
30415 65075 43098 13500 74379 06814
51983 12316 52371 13559 33124 39842
16361 80772 97056 29092 58145 15465
07901 10121 98617 56398 94163 84731
35039 04398

Message "B"

36713 45807 18921 63867 55406 58179
56296 89216 37798 07485 62909 18085
43072 74292 56571 84650 14339 73640
72171 32564 58871 43063 74180 79875
62968 92163 77676 85629 06509 89612
34339 73484 97424 81798 72517 13747
74292 78017 08465 26896 80036 88716
74065

~~CONFIDENTIAL~~

6. Solve the following monome-dinome-trinome cryptogram and recover the original matrix:

61745 04120 43950 43238 65332 06382

01503 20682 61661 20436 53513 17150

68412 19203 16204 38543 12043 20150

35350 12335 45039 44171 2018.6 50929

78509 23850 46204 84739 45049 62065

82820 43532 01561 93231 65184 71533

53842 04541 62453 32043 85421 68564

7. Solve the following uniliteral-biliteral cryptogram, and recover all keys:

PVOYA CKRTE AUOOD KNWOI BKEIA UBTAP

WOIDG OBKNT AENXB TAEBG YAEUI ENLCT

EOBZF HOOBL YIEBG UUONT BXPXR MIBKA

CWOIE PKCGP VAYEF TEINM PKSGE YAODK

UEDLR ZEYAN GCWUY AUPKP MEOIA CVPWY

RWOYC WAPWO IYAOR WSVCH EIRVC KYYPK

OICKY NWODH RKDGE AEBXU ERXDM EYABT

EUCWN GRTDW PHOAO PGUNG RKCVY ONZBG

UENTX

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

8. The following cryptogram, enciphered in a Playfair-type digraphic-monographic system, is suspected to begin with the probable stereotype "MORNING REPORT FOR MONDAY NOVEMBER TWENTY FIRST." Solve the text and recover all keys.

A Q T I N J F Q H Q P T L G P T A Q S K I V A T X C J E H Q

P Z K M R Z G H Y N P N P P Q Q T D M K M L R G P T B W R Z

P Z P R G L V T P G G A H H Q M P G A Y Q M H M F K R R K Q

H Q M K M R J N P H E J C M D K Z Y S R K Q B C A K Q R Y Q

M C Q G G A H H Q N P R Y Q M Q X G L V Q H J T N M Q K P D

A H C T M K Q V G G A H H Q T A K Q V P K M R J N P H E J C

M D K Z Y S R K L V L O C M X C X K T P

9. The following cryptogram was enciphered in a dinome-trinome digraphic system employing matrices similar to those in Figs. 90a and b, except that the internal numerical sequences have been changed. The message is suspected to end with the signature VINCENT ANDERSEN COL INF. Solve the text and reconstruct the matrices involved.

71665 73330 13492 25221 39225 86765

01802 60940 44263 12514 47303 60733

96104 70273 72027 53072 85735 39518

42301 07824 22132 71923 51903 51663

92569 09402 78709 40353 01078 21946

95755 85962 42213 27197 65187 26752

74097 55734 86919 61182 81051 02719

85196 57392 20085 32536 75171 92577

63494 35234 45067 19349 22522 04714

41045 22216 57508 77537 16223 93144

24586 34944 82506

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

10. The following cryptogram, based on a Morse code system, is suspected to begin with a spelled-out number. Solve it and recover all keys:

71430 62809 18592 35607 61572 04953

79012 87548 65983 04037 95327 30751

34904 56564 20813 01258 16408 97156

64597 60410 83159 34702 68032 95357

25173 02589 41582 60360 91754

~~CONFIDENTIAL~~

(BLANK)