TOP SECRET

NATIONAL SECURITY AGENCY
FORT GEORGE G. MEADE, MARYLAND

CRYPTOLOG

APR · JUN 1981

P14

P.L. 86-36

P.L. 86-36

THIS DOCUMENT CONTAINS CODEWORD MATERIAL

TOP SECRET

CLASSIFIED BY NSA/CSSM 123-2
REVIEW ON 1 SEP 2011

CRYPTOLOG

VOL. VIII, No. 4 - 6   APRIL - JUNE 1981

MIDDLE-AGE SPREAD (U)

M3

P.L. 86-36

People working at NSA during the last ten years have been able to witness and perhaps experience a phenomenon {U} likely to occur only once in the lifetime of an organization. During this period NSA has moved along that portion of its life cycle from a new, continually growing organization to a middle-aged organization with a static or even decreasing work force. This change was so subtle and occurred over such a long period of time that many may not have even noticed that it was taking place. To those who prepare and read the internal job announcements, it should have been obvious. To the managers, identifying and recognizing its occurrence should have been crucial.

(C) When an organization moves into the middle-aged phase of its life cycle, many characteristics surface that are quite comparable to those of a person entering middle age. As with some people, a "middle-age spread" develops. In most organizations this usually occurs at the lower supervisory, higher worker level (Grades 11 or 12 at NSA). All of a sudden the majority of the "working people" have achieved that grade. A bulge or overabundance of people at that pay level occurs—in the neighborhood of 5000 in the Agency at present. The input grade or grades below the overstaffed level suffer a corresponding decrease, since there is reduced hiring and promotions continue. Promotions out of the overstaffed level, in this case, to Grade 13, are not sufficient to reduce the bulge since promotions "in" are more numerous that promotions "out."

(U) Thus we have a situation somewhat similar to that which occurs when a person cheats on a diet: a wide spot is created at the middle. This diminishes the desireability of anything less than a supervisory position, as personnel jockey for positions with the best promotion potential. People who actually do the work become harder and harder to find, since the rewards to be gained are not as easy to come by for the non-supervisors. Specialty jobs become difficult to fill. (Just look at the number of job advertisements for traffic analysts or engineers, if you need convincing.) Career development is forgotten as managers attempt to hold onto what few workers they have, especially the good ones. Closely guarding these valuable resources becomes a major managerial function, sometimes without proper consideration of the organization as a whole, or of the individual. This, in turn, creates a frustration for those who can't achieve a supervisory status and are relegated to a worker position. This frustration causes them to give up, become nonproductive and to hang on only long enough to find a vacancy they consider more advantageous to their career. This process creates trauma within the organization.

(U) The individual entering middle age tends to suffer the depressions, frustrations and fears, that are a normal part of the aging process; the middle-aged organization is susceptible to these same emotions. Managers are particularly vulnerable. Some must make adjustments and some may have to make complete revisions in their style of management. In the early formative years, there is a steady stream of new, bright, eager employees continually entering on duty. Mistakes in planning, and motivation, and in the managing of these employees were easy to overcome because of the continuing new input, on the one hand, and the opportunities caused by constant upward movement of personnel, on the other. Managers were certain that they could always replace a lost or unmotivated employee; consequently, less management of personnel assets was required, and less was done. Thus, the manager in the new or growing organization

needs fewer managerial skill in order to get by. As the organization grows older and finally reaches the point where few new employees are entering on board, a whole new type of managerial perspective becomes necessary. The replacement of personnel who move up, on or out becomes increasingly difficult. If the manager is assigned to an area which is, in the minds of the on-board employees, a less than desireable one, his ability to recruit from within the organization is diminished. Mistakes that were previously covered up or glossed over now can result in the loss of a valuable resource. The manager must now face up to his problems and make decisions. More importantly, these decisions must be right the greater part of the time. The manager must motivate his people and create a reputation for fair play and excellence, which will help him in the recruiting process, since recruiting situations will be such that frequently the manager must sell himself in order to attract the numbers and types of people required.

The manager must now learn to manage!

(U) He must motivate, provide job enrichment, and develop his employees so that job satisfaction and, consequently, morale are high within the organization. Since he will usually be short of resources, he must learn how to deploy them so as to obtain the maximum output from the available resources. The welfare of his personnel must occupy a major part of his workday. No longer can the problems of the employee be given short shrift, since the loss of even a single employee can cause a severe jolt to the work force. Continuous failure will eventually lead to the demise of the organization, since empty billets are the most logical candidates for reduction, After all, if you've managed to get along without some function for a period of time, it probably wasn't worth doing in the first place.

(U) The managers of a middle-aged organization have to lead rather than operate from a position of arbitrary authority, since other opportunities are readily available to those at the working level. Those who master the techniques of leadership will have little trouble attracting personnel; those who can't will always be short-handed or will attempt to institute a policy of limiting intra-organizational transfers. (The recent moratorium on transfers of clerical personnel is an example of this.) When this happens the organization loses; the inevitable results are discontent, decreased productivity, and, eventually, the loss of employees through attrition.

(U) In short, managers of middle-aged organizations must, firstly, recognize the symptoms, and then take whatever actions are necessary to alter their managerial philosophies so as to become leaders. Some will not have to change at all; others will make the needed changes; and the rest will fail.

SOLUTION TO NSA-CROSTIC No. 32

[THE] JOYS [AND FRUSTRATIONS] OF

SOLUTION TO NSA-CROSTIC No. 32

"[The] Joys [and Frustrations] of Plural Dropping," [Arthur J.] Salemme, CRYPTOLOG, January 1978

"When our daughter and a friend of hers were both five and were eating lunch at our house, my wife gave them each a sandwich and a slice of American cheese cut in strips. The little friend particularly [enjoyed] the latter and asked what they were. 'Cheese,' she was told. 'Well then,' she asked, may I please have another chee?'"

"This field of research is so virginal that no human eye has ever set foot on it."

—Opening sentence of a doctoral dissertation in physics, cited in *Smithsonian*, March 1981

GRADING THE RUSSIAN P Q E (U)

G53

P.L. 86-36

Since the Russian Professional Qualification Examination (PQE) was instituted in 1967 as a means to identify the (C) Agency's most competent Russian linguists, the number of people taking Part IIA, the classified translation section given every six months, has increased from 16 to almost 200. This drastic increase in the work load for the members of the PQE committee chosen to prepare and grade each test is one of the main reasons for the recent change in the grading system introduced last September in PQE #21. This article will explain the general testing procedure and the grading system currently used by the committee.

(SC) The examination itself is generally about 70 to 80 lines long, and consists of four to six selections of voice and printer traffic, some in Cyrillic and some in transliteration. The committee attempts to ensure that the items used for the test are representative of the different types of material encountered by Russian linguists at NSA.

In selecting these items the committee looks for linguistic or technical elements that a capable Agency linguist with several years of experience should reasonably be expected to be able to resolve: garbles in printer traffic, transliterated Russian, transcription errors, poor grammar or incomplete sentences in the original text, omission of punctuation and prepositions, highly colloquial expressions, and so forth. An aspirant is expected to produce a translation that accurately conveys the content of the original in good English, while adhering to NSA translation guidelines. Four hours are allowed for the examination.

(C CCO) The PQE IIA sub-committee consists of a chairman and four other members, all of whom are required to be certified Russian linguists from various operational

elements of the Agency. The chairman ensures that the committee, like the test, is representative of the diverse analytical elements exploiting Russian traffic. The committee selects a number of items it feels are appropriate for the test and drafts model translations. Then, several certified linguists who are not on the committee are asked to take the test, in order to establish that its length and level of difficulty are acceptable. This validation group also aids in establishing a standard by which the performance of the aspirants will be judged.

(C) Next, the test is reviewed by the Language Career Panel's Standing Committee on Language Testing (SCLT) to ensure that the test is fair, as well as comparable in length and difficulty with tests in other languages. It also approves the grading system to be used by the committee. Finally, several certified linguists, who have volunteered to act as controls, take the test along with the aspirants and under the same conditions.

(U) For the four tests immediately preceding PQE #21, each member of the committee P.L. 86-36 was responsible for grading several of the test items, but not the entire test. Three committee members graded each test item, in order to obtain a more balanced evaluation. These three individuals would each deduct points, according to a fixed numberical scale for the various types of errors,[1] with a total score assigned to the item being graded. These three scores were later combined to produce an average grade for the item, and the sum of these grades was used as the aspirant's overall grade for the PQE. Finally, the test papers with the least number of points deducted were passed, with the exact number of passes being determined by the control group. The passing mark for the aspirants has generally been set at a significantly lower level than that of the validation and control groups.

(U) This approach, while satisfying the need for a reasonably objective grading system, led to several problems, which were noted by both the aspirants and the committee members. To begin with, the large number of test papers involved forced the com-

mittee to spend an enormous amount of time on establishing an exact grade for each paper—six months for PQE #20, as an example. This seemed to be a less than efficient system, since most of the committee's time was spent grading the papers with the most errors and the least chance of passing. It should be noted in this connection that some PQEs in other languages have been graded using the same system of deducting points for errors, but in conjunction with a cutoff score, such that anyone losing more than an established number of points automatically failed the test, making it unnecessary to continue grading the paper. Furthermore, the number of aspirants for the other languages has been much smaller, as few as two or three, in some cases, which meant that less time was required for grading.

(U) The numerical grading system, as used for the Russian PQE, has also inadvertently tended to maximize the attention given to minor errors, since a grader under pressure to arrive at an accurate score for each test is inclined to look for minor errors and to deduct points for them. This has, unfortunately, at times resulted in disagreements and grading discrepancies among the committee members, since no two graders are likely to share the same opinion of the boundary between poor word choice and a definite mistranslation, or of the seriousness of poor spelling and grammar in a translation. In addition, the numerical grades, while providing apparent objectivity, have tended to emphasize the number of errors and to obscure the nature of the errors; one 4-point syntactical error may mathematically equal four 1-point English usage errors, but these cannot be considered equivalent reflections of a linguist's ability to produce an acceptable translation. This caused some problems during the grading of PQE #20, since the length of time required to grade the tests in the first place precluded any comprehensive review of the grades before they were released.

(U) As a result of the problems arising during the grading of PQE #20, the committe preparing PQE #21 decided to modify the grading system to incorporate the cutoff feature mentioned above. The cutoff point, like the curve used for grading the preceding exams, was to be based on the performance of the validation group. It was also decided that the committee would no longer attempt to assign an exact numerical grade to each test. Under the new system, a grader was to read the entire test paper and assign a Pass or a Fail to each test—as had been done for PQEs #15

and #16—after comparing the aspirant's performance to those of the members of the validation group, with the emphasis on the major errors committed by the aspirant. Each test was graded by three committee members, and a unanimous opinion, whether pass or fail, was recorded as such without further discussion. Split decisions were resolved by discussions among the graders, with the final grade determined by consensus. Minor errors were generally taken into account only for borderline papers, which were failed if they contained an excessive number.

(U) The new grading system has already shown itself to be superior to previous methods in several ways. First, the evaluation of the tests was completed in just three months, as compared to the six months required for PQE #20. Most of the committee's time was spent on borderline papers, where more effort was required, rather than on the papers that would clearly be failed in any case. Furthermore, the emphasis in grading was directed to the most serious types of errors, with a corresponding de-emphasis in the more subjective areas of word choice, elegance of phrasing, and the like. Finally, the immediately apparent distinction between a Pass and a Fail —as contrasted with the difference between two numerical scores—ensured that any disputed tests would automatically be reviewed by the committee, with any grading errors, such as overlooking omitted sentences, being detected during the review process.

* * * * * * * * * * * * * *

(U) The rest of this article will provide examples of the principal types of errors, and show the relative weights assigned to them in grading. The examples are given either in Cyrillic or in transliteration, just as they appeared in the original material from which they were extracted. Also, garbles and other defects in the original have been left uncorrected. Each example includes the original Russian (R), the model translation prepared by the committee (M), and the aspirant's version (T).

(SC) MAJOR ERRORS. The focus in grading, as explained above, is on major errors— those for which four or eight points would have been deducted under the previous system. These can, for the most part, be regarded as errors in grammar or syntax. The aspirant has not understood the relationships among the elements of a sen-

DOCID: 4019689

tence, or among the sentences in the origi-
nal, and has accordingly produced a trans-
lation with serious distortions of the
meaning and structure of the original.
The triage system used for preliminary
grading (separating the papers into
pass, fail, and needs-further-discussion
categories) used the number of grammatical
and syntactical errors as its primary
criterion, although certain other errors,
such as the omission of an entire phrase or
sentence, were also considered to be major.

EO 1.4.(c)
P.L. 86-36
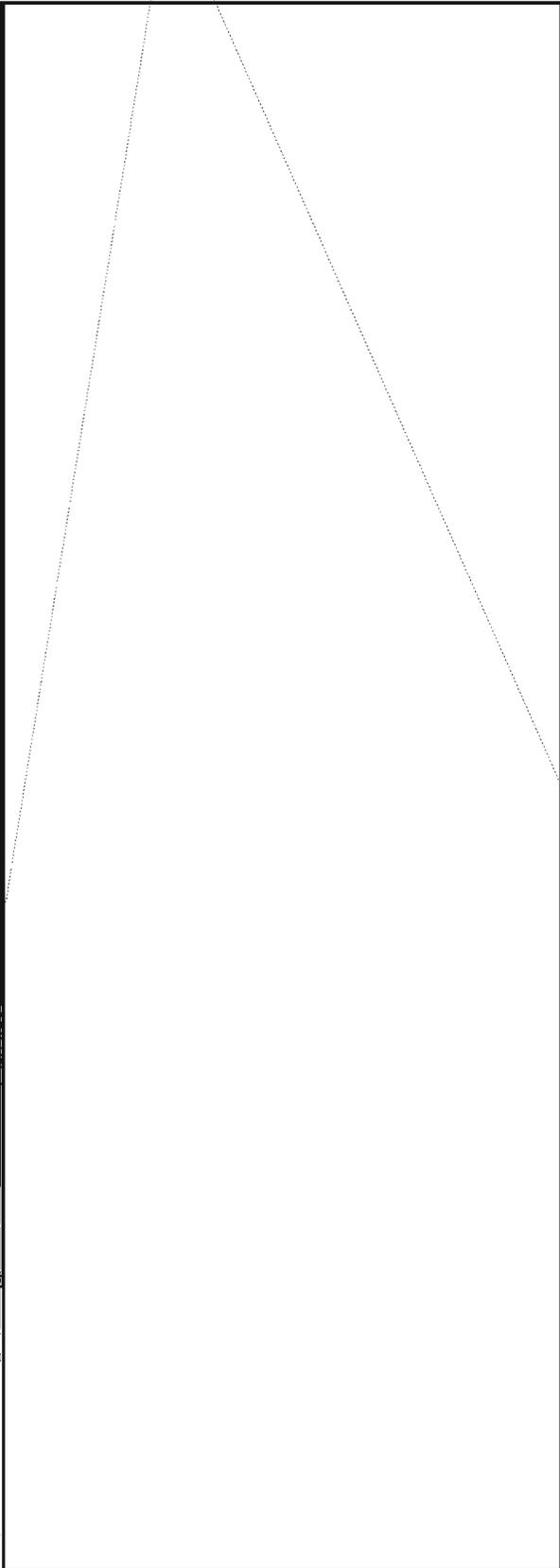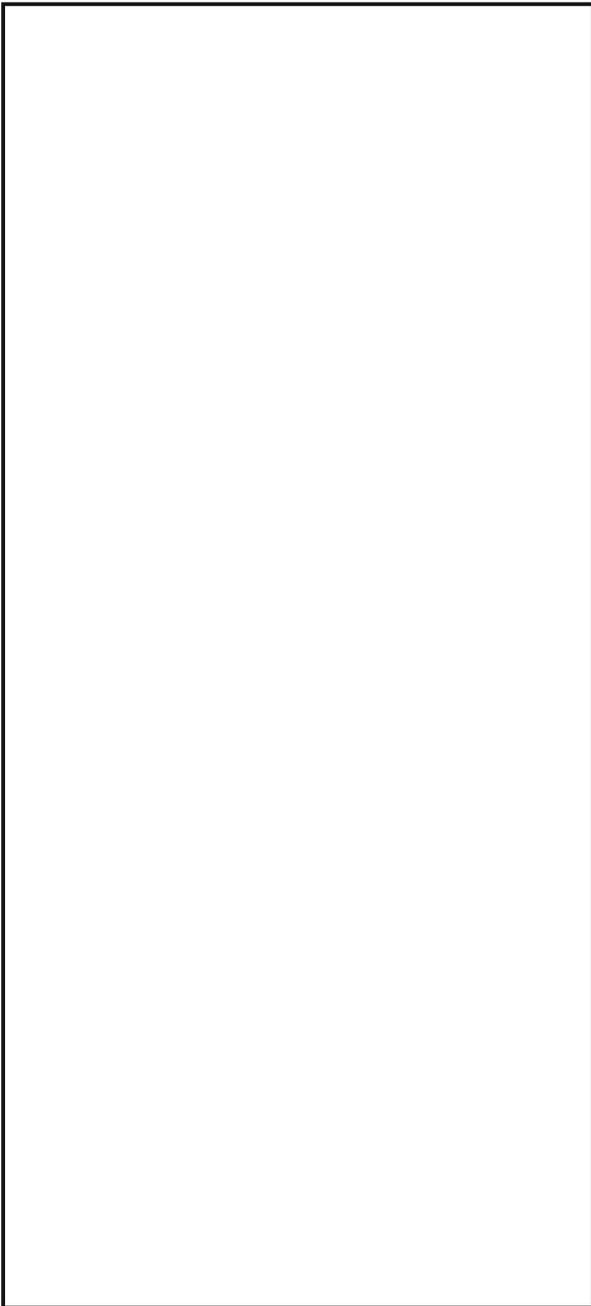
expected, this type of error occurs much
more frequently than grammatical or syn-
tactical ones. This may to some extent be
a result of the four-hour time limit on
the PQE, but in many cases it appears
to be more a result of carelessness or
indifference on the part of the translator
Other errors treated as minor by the PQE
#21 committee have included the omission
of a word in the translation, extremely
awkward or incomprehensible English, in-
correct verb tense usage, and so forth.
Here are some examples of minor errors
from PQEs #20 and 21.

The aspirant treated an adjective as a
noun and separated it from the noun it
modifies. It should be noted that there
were several errors in the transcript
used for this item (masculine and feminine
modifiers for a neuter noun), and that the
aspirant's error may have originated in his
mistranslation of the verb SCHITAL.

In summary, most of the common major
errors involve verb forms, Russian word
order, colloquial expressions and noun
endings. These, in addition to lexical
errors, can lead a translator to see
nonexistent relationships in the text
and to produce translations based on
them, sometimes causing distortions in
other parts of the text, so as to make
them fit the translator's perception.

(TSC) MINOR ERRORS. Lexical errors are
considered "minor" only in the sense that
they are less serious than grammatical and
syntactical ones. Such errors (for which
two points were deducted under the Child
system) cannot, however, be considered as
insignificant. Gross mistranslations can
occasionally affect the meaning of a text
as seriously as a syntactical error, and
even less severe ones will degrade the
quality of a translation. As might be

EO 1.4.(c)
P.L. 86-36
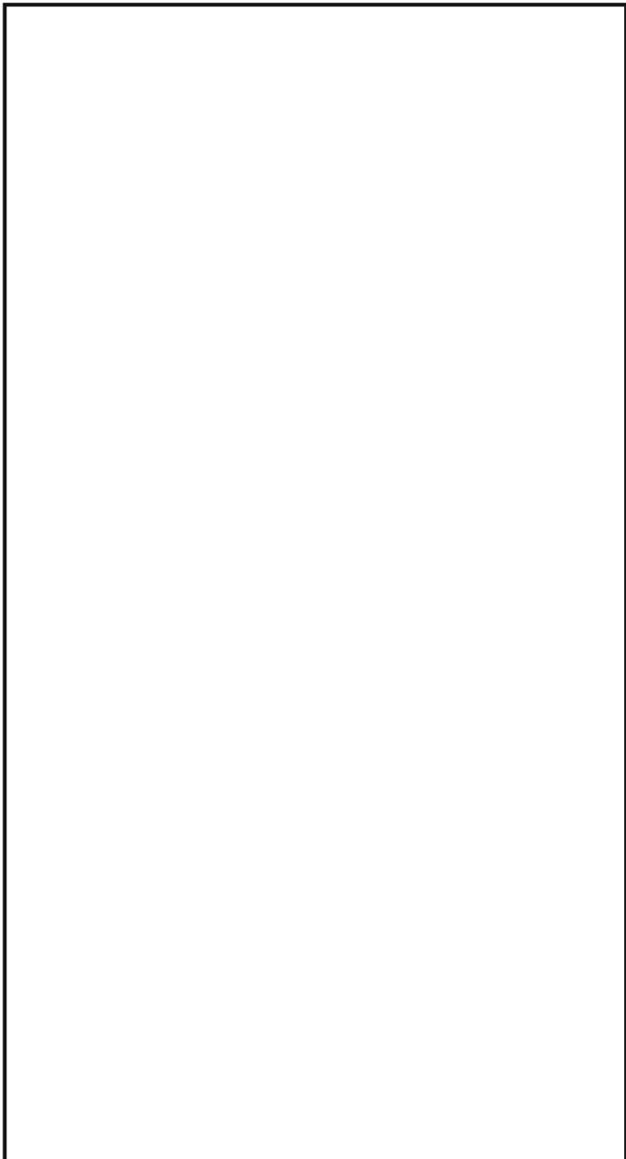
account. In spite of objections from several aspirants that the purpose of the PQE is to test command of Russian, not English, an individual translating from Russian into English is expected to be able to express himself well in the latter. Aspirants are encouraged to bring an English dictionary and a thesaurus to the examination along with the Russian-English dictionaries recommended by the panel.

(U) The area of word choice and phrasing is more ambiguous. Graders are usually fairly tolerant, at least under a Pass/Fail system, as long as the translation can be understood. Mistakes like beginning a formal intergovernmental message with "Dear Friends" (inappropriate style) will generally be overlooked by the committee in determining an aspirant's grade. Aspirants should realize, however, that a translation that disconcerts a reader or forces him to make an effort in order to understand what was mean—such as might result from adherence to Russian word order—is an inferior one.

(C) NSA TRANSLATION CONVENTIONS. Aspirants are also expected to follow the minimal format rules prescribed for NSA translations by USSID 300: capitalizing proper names, indicating interpolations by the translator, noting garbled words, and so forth. As has been the case with style and spelling errors, no aspirant has failed the Russian PQE exclusively because of failure to observe Agency conventions. It is, however, recommended that aspirants familiarize themselves with the relevant portions of USSID 300 before taking the test, and attempt to follow these conventions as much as possible.

(U) CONCLUSION. The Russian PQE IIA committee feels that the modified Pass/Fail system now being used is an improvement over the point system which it replaced. In addition to requiring less time for the grading process—a vital consideration in view of the large and ever-increasing number of aspirants—we feel that it can provide results that are both fair and reliable.

For PQE #21 this type of error was taken into account primarily for tests near the rough cutoff level designated for the number of major errors. A test that would have been borderline on the basis of the major errors it contained would fail if it also had a large number of lexical errors, with the cutoff point for these minor errors being determined by the performance of the validation group.

(U) ENGLISH ERRORS. Although no aspirants have been failed solely because of poor spelling or English grammar—errors for which one point would have been deducted under the Child system—these mistakes do affect the quality of a translation and may influence a grader's opinion of a paper, even if not formally taken into

*   *   *   *   *   *   *   *   *   *

1 For a description of this scoring system, see "An Objective Approach to Scoring Translations," by [ ] CRYPTOLOG, March 1976.

P.L. 86-36

Third Party Relationships (U)

B309

WHY HAVE THEM?
WHAT ARE THEY?
DO WE USE THEM PROPERLY?
ARE THEY WORTH THE PRICE?

P.L. 86-36
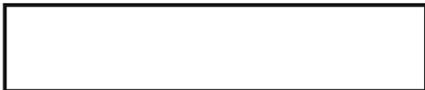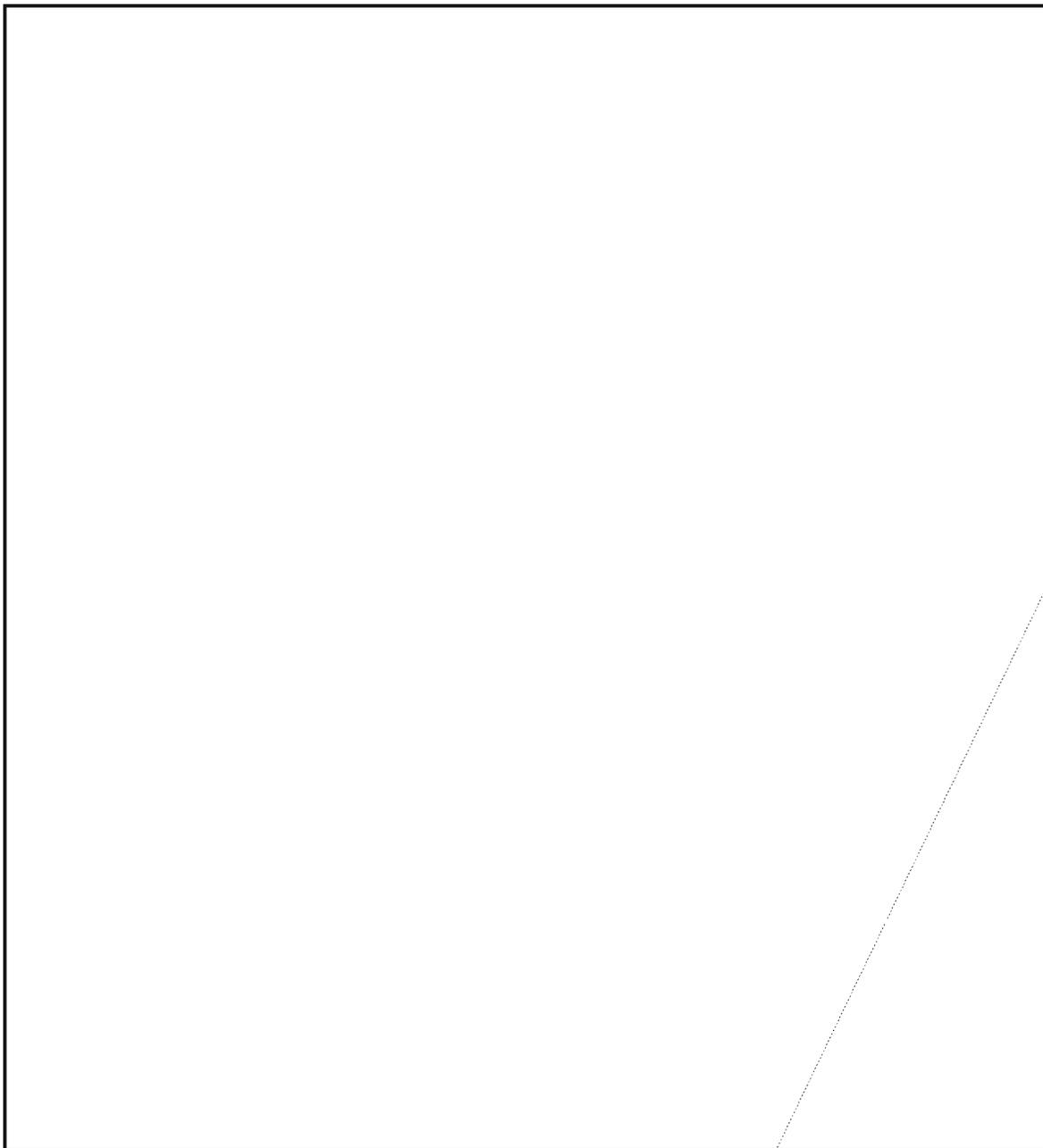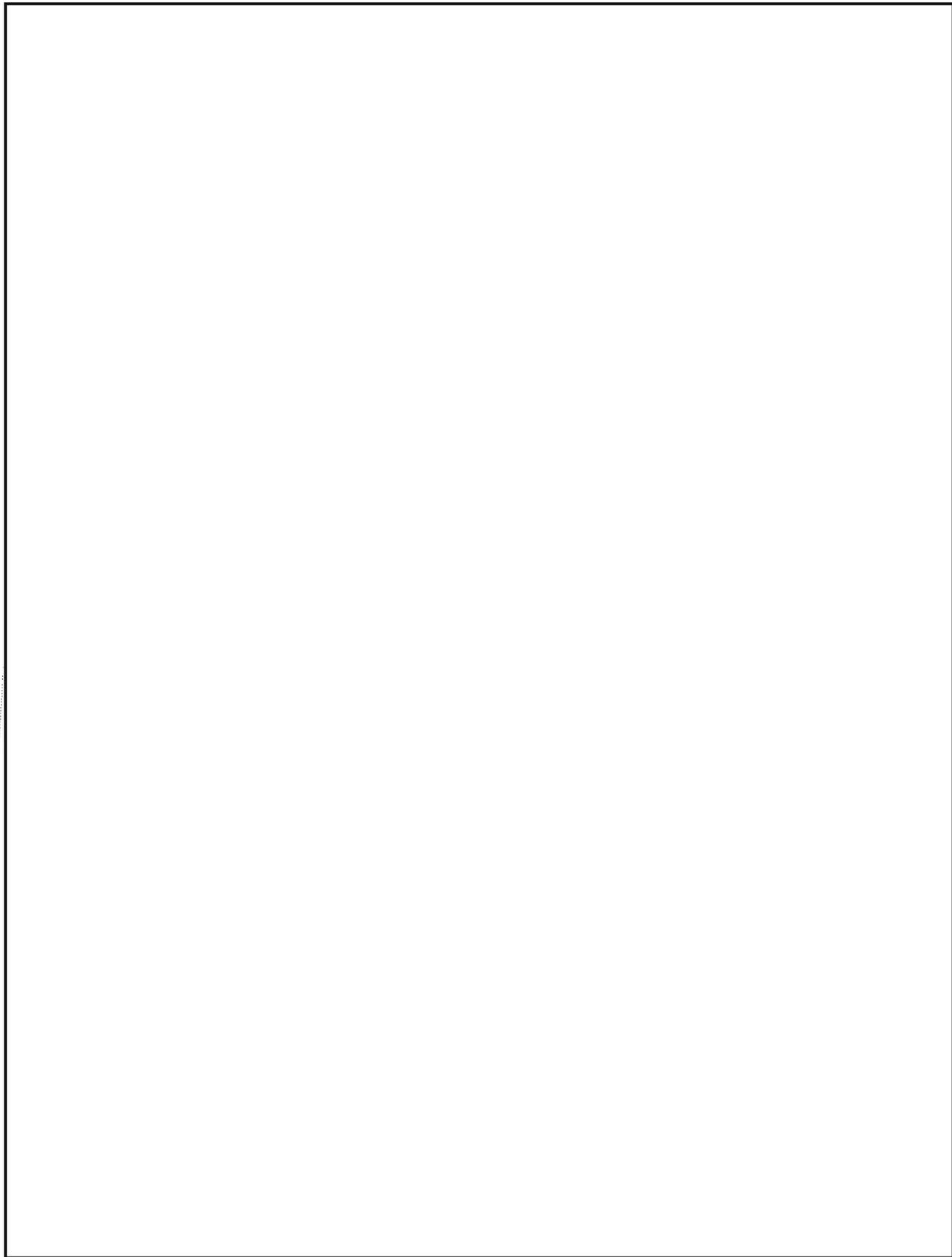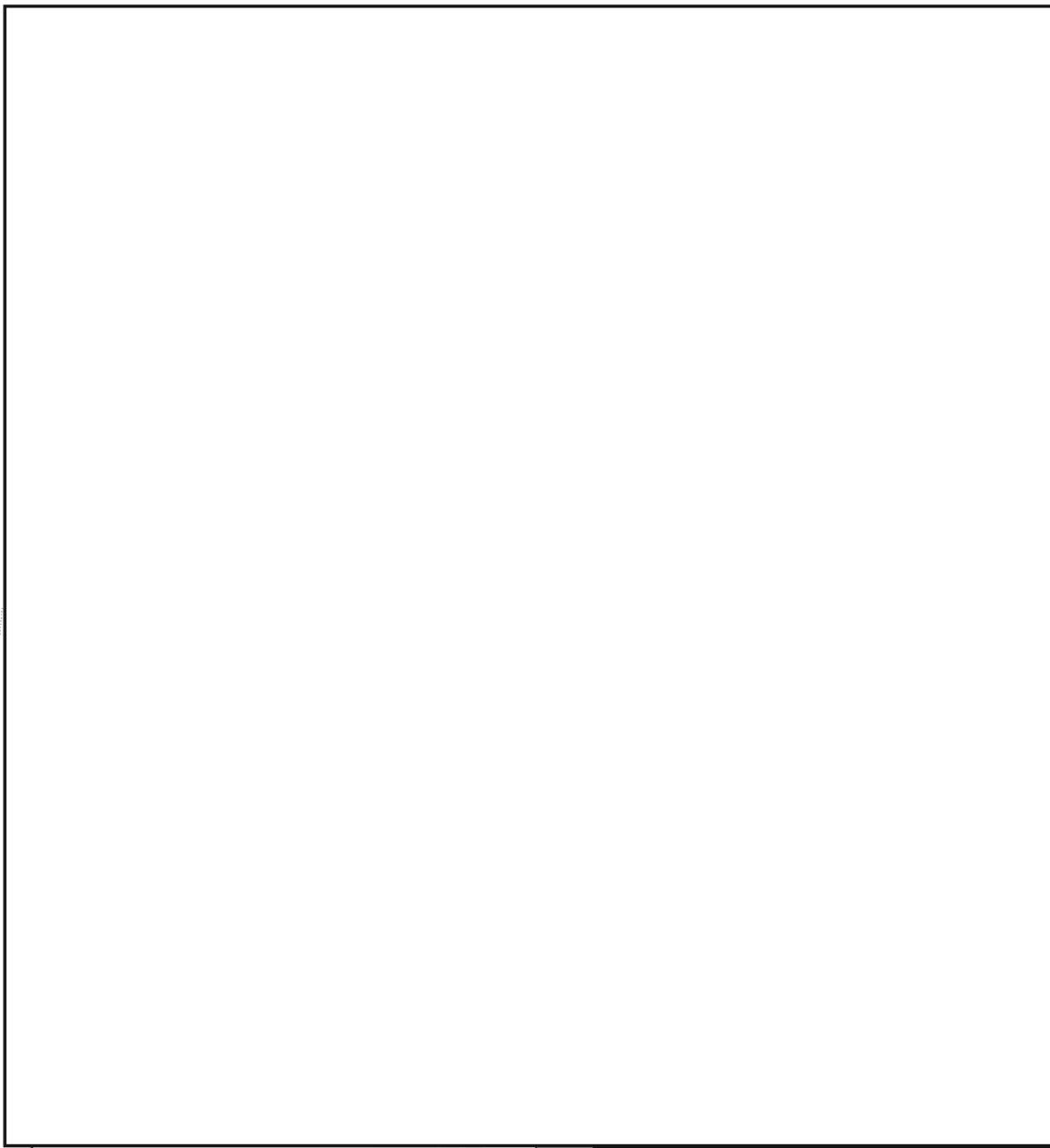
EO 1.4.(c)
EO 1.4.(d)
P.L. 86-36

DEPARTMENT OF CLASSICS AND MYTHOLOGY (U)

Is there any mythology buff out there who can identify
whatever personal attributes of these two Greek goddesses
make this quotation an apt one?   If so, please call
CRYPTOLOG on 1103s.

EO 1.4.(c)
EO 1.4.(d)
P.L. 86-36

EO 1.4.(c)
P.L. 86-36

~~CONFIDENTIAL~~

The Poets' Corner (U)

> Introduction is ~~C CCO~~
> Poem is UNCLASSIFIED

In the mid-1950s a cryptanalytic effort was underway in ADVA, the predecessor of today's A5 (Cipher Analysis), against a particularly recalcitrant wired-wheel system. The R & D element then known as MATH, comparable to the current R51 (Mathematical Research Division), as part of its mission to provide applied mathematical support to PROD elements, suggested to ADVA a novel (for those times) approach involving eigenvectors. The ADVA analysts resisted this as being no improvement over the techniques they were already using. MATH reported this reluctance to the ADVA leadership, slyly adding that perhaps "ADVA was frightened by eigenvectors." A lively "discussion" ensued, the upshot of which was this "D/F", sent from William Lutwiniak, Deputy Chief of ADVA, to Arthur Levenson, the Chief.


DISPOSITION FORM

FILE NO.

SUBJECT Poetic License, Granting of **DATE** Dec 21, 1956 **COMMENT NO. 1**

FROM Deputy Chief, ADVA

TO Chief, ADVA

The Deprecators Deprecated

The MATH coterie from R & D sectors,
Before it gives its reluctant OK,
Carps and cavils and blusters and hectors,
Cutherods Herod in his palmiest day.
What's the latest from these sayers of "Nay"?
These wet-blanket boys—these MATH humectors—
Have spoken their minds, have coined a cliche:
ADVA is frightened by eigenvectors!

This hair-splitting group of Math correctors,
Nit-picking along its R & D way,
Sees naught in PROD but techniques neglectors,
And gives us poor boobs a Bronxian bray.
Always bellitlin', in manner so gay,
These chi-squared kids, turned pedal inspectors,
Have found ADVA's feet to be made of clay:
ADVA is frightened by eigenvectors!

These chronic conscientious objectors
Prognosticate rain—yet ADVA makes hay.
What's the word from these theory-collectors?
What long-range gem do they offer us, pray?
Why, after their latest (none too long) stay
These cryptanalytic mine-detectors
Have let it be known, for public display:
ADVA is frightened by eigenvectors!

ADVA, shall we forthwith enter the fray,
And give the lie to these PROD defectors?
Let's get ̶ that maze: then they cannot say
ADVA is frightened by eigenvectors!

Bill Lutwiniak
William Lutwiniak
Deputy Chief, ADVA

~~CONFIDENTIAL~~   ~~HANDLE VIA COMINT CHANNELS ONLY~~

NSA-Crostic No.33

D.H.W.

P.L. 86-36

P.L. 86-36

CONFIDENTIAL

CLASSIC CABLES (U)

Most people find that "REQUEST STATUS
OF RESPONSE TO REF MESSAGE" is suffi-
cient. But now and then there are
exceptions...

W + 6

CONFIDENTIAL
HANDLE VIA COMINT CHANNELS ONLY

CLASSIFIED WORK SHEET

THIS FORM FOR INTERNAL AGENCY USE ONLY

This work sheet contains information affecting the National Defense of the United States within the meaning of the Espionage Laws, Title 18, U.S.C. Sections 793, 794 and 798, the transmission or the revelation of which in any manner to an unauthorized person is prohibited by law.

ZCZCSMIA4418RNB154
RR
DE   #6565 1531538
ZNY MMNSH
ZKZK RR RNI DE
R 021547Z JUN 81
FM SUSLO0
TO NSACSS
ZEM
CONFIDENTIAL COMINT CHANNELS
FOR G9095; INFO G91, Q32 FM D/SUSLO
  148-81
SUBJ: "I SHOT AN ARROW INTO THE AIR - - -." (U)
REF: 043P-81, 141217ZZ MAY 81
(U) QUERY IF YOUR OPINION REQUESTED IN REF CAN NOW BE
MANIFESTED FOR THE ENLIGHTENMENT OF CURIOUS MINDS IN
FOREIGN CLIMES. REGARDS.
MESSAGE CLASSIFIED BECAUSE OF ADDRESSEES.
DESTROY 2 JUN 84
#6565

NNNN

ACT: G9
INFO: G9095
        G91
        Q32

P.L. 86

CONFIDENTIAL
HANDLE VIA COMINT CHANNELS ONLY

CONFIDENTIAL   HANDLE VIA COMINT CHANNELS ONLY

TRAFFIC ANALYSIS: Specialty Without Portfolio (U)

This is an address given by Mr. [   ] the A2 Senior Analyst, at the 1980 Symposium of the Communications Analysis Association, and is based on his extensive experience on the Soviet Military Problem.

A2

> This article is classified
> SECRET - HANDLE VIA COMINT CHANNELS ONLY
> in its entirety.

In addition to cryptanalysis, which I do not intend to deal with in this discussion, communications intelligence has always involved two primary, overlapping but distinct, tasks with respect to target analysis:

□ ordering and understanding target communications structure and procedures—commonly referred to as *traffic analysis*, and

□ describing target organizations, activities, intentions and trends —known as *intelligence analysis* or *special research analysis*.

The major overlaps of the two disciplines are in their contribution to target organization, or order of battle, and command and control.

Of these two skills, only the latter one, intelligence analysis, has been effectively accommodated in the NSA career structure. Traffic analysis, in terms of its application, is largely regarded as a skill to employ if time and resources permit, which means that it is basically non-functioning in many important areas. In career terms, it has been essentially inaccessible to representative numbers of people, being an apprentice slot which must be abdicated by those with more than modest ambitions.

SECRET

SECRET   HANDLE VIA COMINT CHANNELS ONLY

EO 1.4.(c)
P.L. 86-36
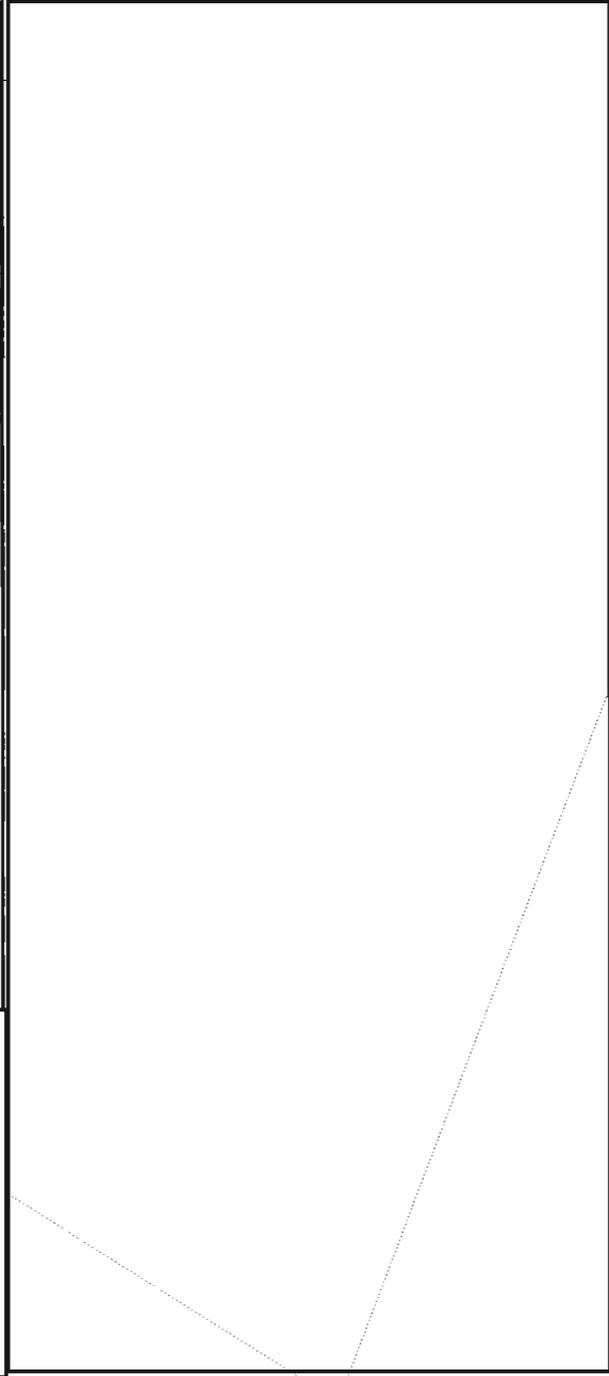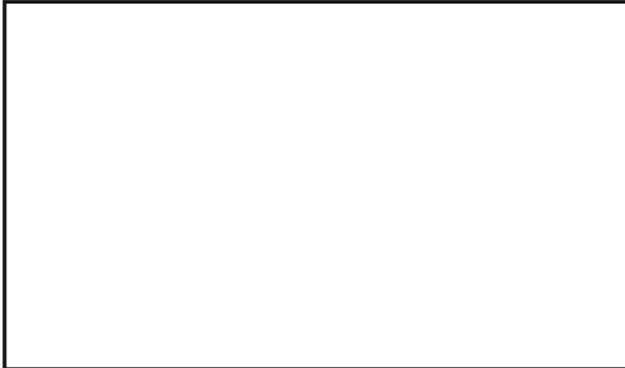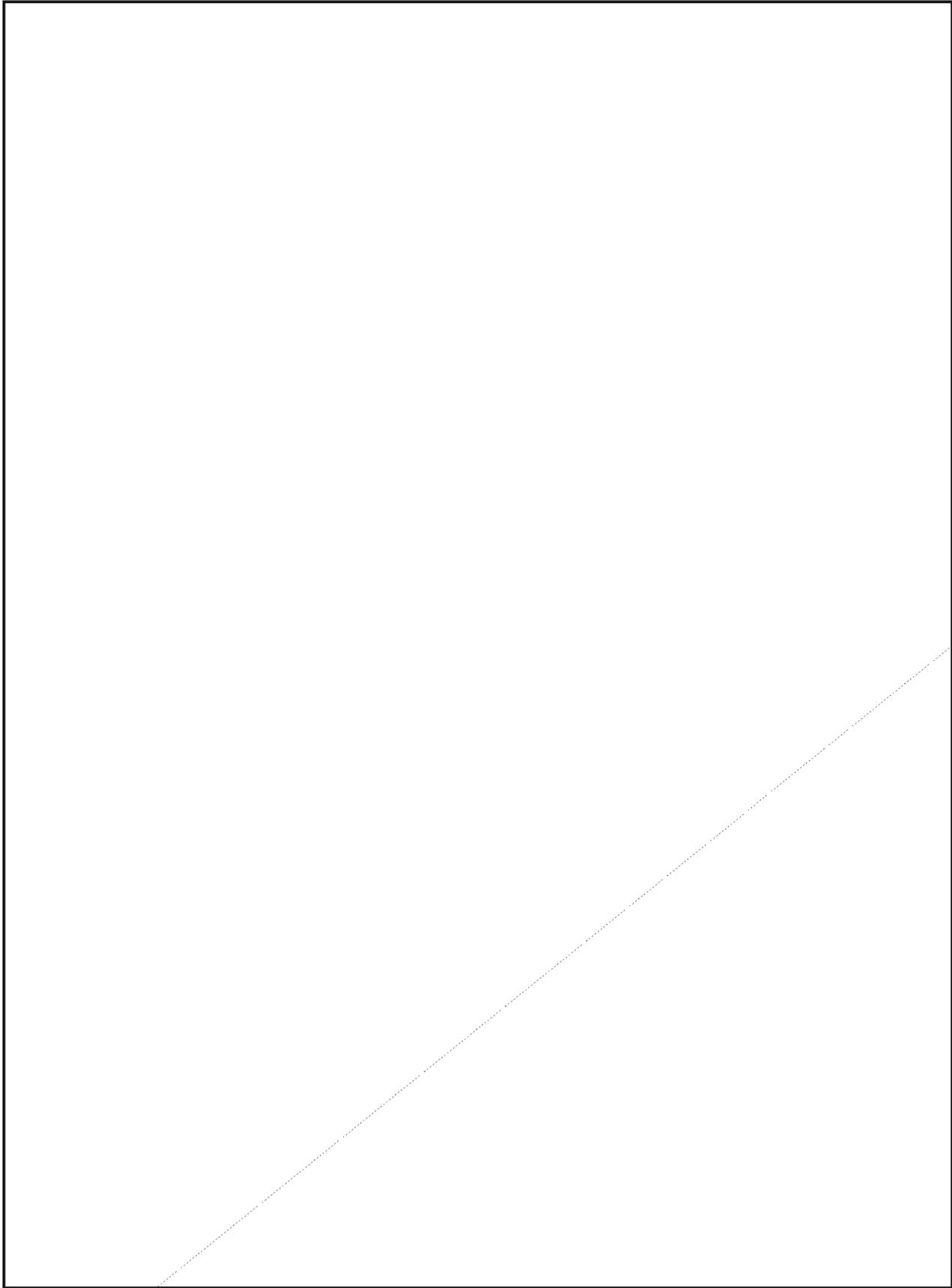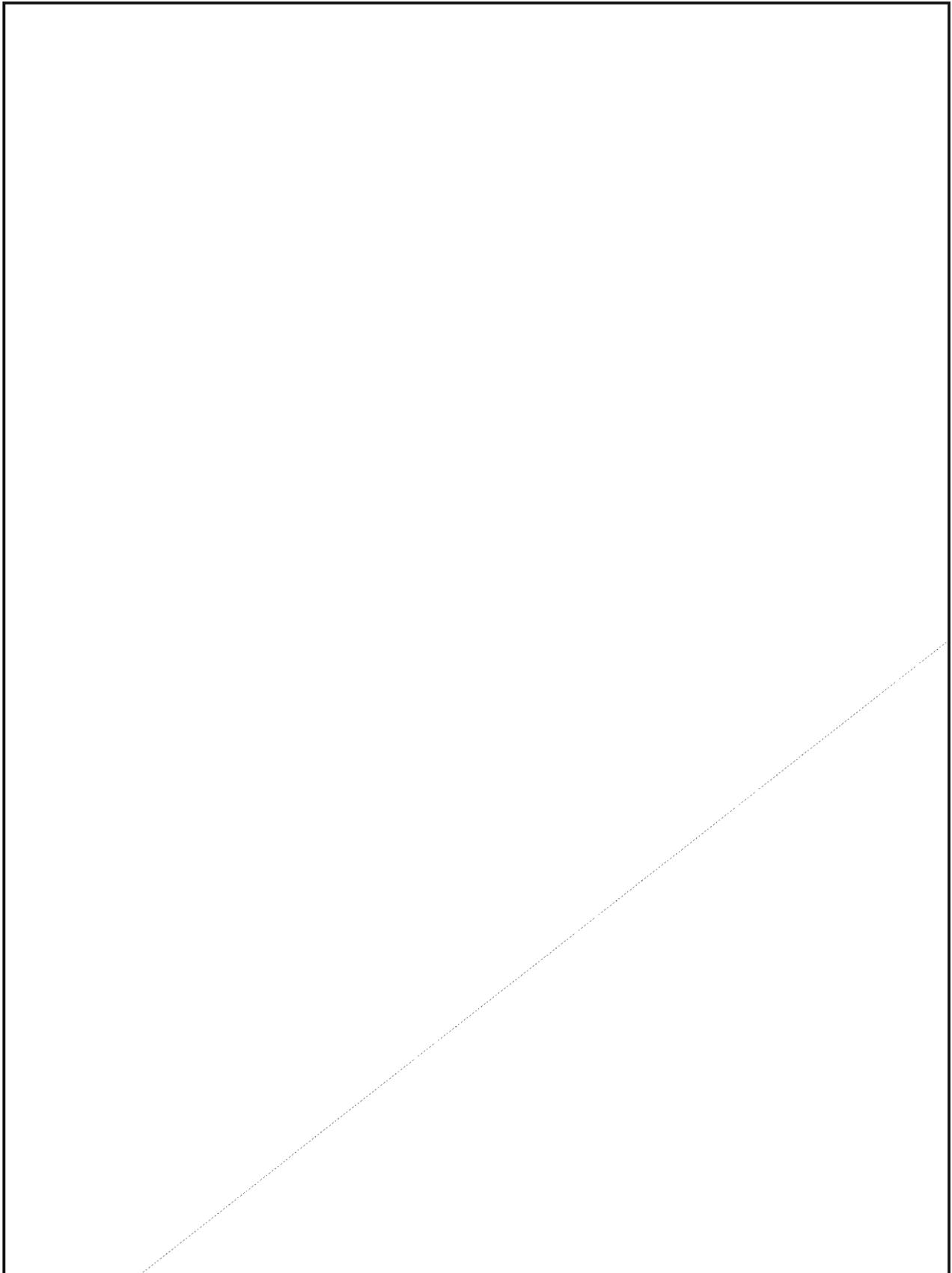
ATTENTION: PLATFORM USERS (U)

Those readers who wish to send contributions to
CRYPTOLOG, and who have access to PLATFORM, may
forward their submissions via PLATFORM. Send
them to cryptolog (that's all in lower case)
at BARlCØ5. Contributions, naturally, will
also continue to be accepted in handwritten
or typed form. Any questions? Call 1103s.

EO 1.4.(c)
P.L. 86-36

DEFENSE INTELLIGENCE VIDEOCASETTE PROGRAM (U)

(C) Did you know? Collateral Documents (T5322) holds a collection
of videocasettes which are products of DIA's Defense Intelligence
Videocasette (DIV) Program. The subjects range from documentaries
on the Soviet military to interviews with authorities on Chinese
society.

(U) The following is a list of the titles currently available. All
titles are UNCLASSIFIED. Classifications of the tapes themselves vary.

    The Soviet People

    The Soviet Soldier

    Soviet Airborne Forces

    Soviet Amphibious Forces

    Soviet Air Operation Concept

    Soviet Tactical Electronic Warfare

    The New Soviet Tanks

    Soviet Armed Helicopters

    The KIEV Deploys

    *BACKFIRE

    FOXBAT A

    *The SS-20

    *The Soviet Afghanistan Invasion

    Warsaw Pact Military Posture

    The Chinese People

    China's Military Posture

(U) Except for those titles marked with an asterisk, these tapes
may be borrowed from T5322 for a period of two weeks. For further
information, call [   ] on 8642s. The asterisked titles may
be obtained from A2045, 5091s.

P.L. 86-36

HELP!

CRYPTOLOG has no magical, automated way of
updating our address list. So if you change
jobs without letting us know, your continued
receipt of the magazine will depend on the
distribution personnel at you former job.
Soem are very helpful in calling to notify
us of new addresses. But not all are. Also,
if your job doesn't change, but your organi-
zation does, because of reorganization, you
may not continue to receive your copy.

So, if you have moved, or if you have been
reorganized, the best way to insure that you
will continue to receive CRYPTOLOG is to
give us a call at 1103s.

TOP SECRET