ch/AID   *2/19*

TO	INITIALS	DATE	REMARKS
DIRECTOR			Steve –
DEP/DIRECTOR			attached is a draft of
EXEC/DIRECTOR			of NPIC survey results
SPECIAL ASST	1	A	3/3
ASST TO DIR			
ASST TO DEP/DIR			
CH/PPBS	2		
DEP CH/PPBS			
EO/PPBS			
CH/IEG			
DEP CH/IEG			
EO/IEG			
CH/PSG	✓	S·J°	20 Feb 70
DEP CH/PSG			
EO/PSG			
CH/TSSG			
DEP CH/TSSG			
EO/TSSG			
CH/SSD/TSSG			
PERSONNEL			
LOGISTICS			
TRAINING			
RECORDS MGT			
SECURITY			
FINANCE			
DIR/IAS/DDI			
CH/DIAXX-4			
CH/DIAAP-9			
CH/SPAD			

REMARKS (continued):

which [ ] prepared for ASPIN. While he emphasized that it is but a draft, he thought that you and perhaps the 6th floor would be interested in seeing it. He would welcome any comments.

Ted

Forwarded for information
S J°

1-2 For Review & Comment

25X1

IP FM 30 (11-68) - OBSOLETE PREVIOUS EDITIONS

MEMORANDUM FOR: *Tom*

The attached is a draft copy of my report re NPIC. As I indicated to you earlier & as you will note, I have excepted the Introduction from your paper to the IP Bd. & also one of your recommendations. Would appreciate your comments on this paper at your earliest convenience.

30 Jan 70
(DATE)

FORM NO. 101   REPLACES FORM 10-101

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COPY

10. NATIONAL PHOTOGRAPHIC INTERPRETATION CENTER

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10.1 Introduction

The major purpose of the National Photographic Interpretation Center (NPIC) is to exploit multi-sensor imagery, primarily black and white photography, in support of the national intelligence effort. To fulfill this responsibility the Center conducts, on designated USIB-tasked missions, a preliminary and rapid analysis of newly acquired imagery in response to priority requirements. This is known as first-phase readout. It also performs a systematic review, known as second-phase readout, of all newly acquired imagery to produce summaries and indexes of available imagery for community use. In addition, NPIC conducts comprehensive studies of imagery in specified substantive areas to meet detailed requirements of the community. The product of these exploitation efforts is in the form of hard copy reports, cables, briefing boards and ADP listings which are disseminated throughout the community.

The Center also provides certain services of common concern to other PI organizations as well as the Intelligence Community at large, including photo-measurement support, photo reproduction support, printing and dissemination services, and maintenance services for certain imagery-related information files of common interest. The Center has extensive

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facilities to provide these services which can be drawn on by the community to reduce the duplication of efforts.

In addition to the above imagery analysis tasks and related services, the Center engages in research and development to improve its own production and procedures, as well as to benefit other imagery exploitation organizations.

In carrying out its responsibilities the Center relies heavily on the use of automatic data processing (ADP) tools and techniques.

The Imagery Analysis Service (IAS) was not covered in the same depth by this survey as the National Photographic Interpretation Center. This is because the Imagery Analysis Service performs essentially the same functions on an intra-Agency basis as the NPIC performs in its third phase reporting on an Intelligence Community wide basis. The IAS does have some community wide or National reporting responsibilities as well, but the great bulk of their resources are expended against Agency requirements.

The Director, IAS, felt that since the document flow in his office is funneled through the reference service of NPIC, the statistics provided by NPIC on this matter would also be applicable to IAS.

10.2

NPIC also provides ADP support to IAS as a service of common concern. IAS utilizes all of the files of the National Base of Imagery Derived Information in their work. IAS did suggest a few ADP applications that may be of interest only to themselves and it is felt that such support will be provided by NPIC as soon as their capabilities permit.

The Committee on Imagery Requirements and Exploitation (COMIREX) is only briefly covered in the Recommendations section of this report. Discussions were held with the Chairman of COMIREX and with the Chairmen of 3 of the 4 Sub-committees of COMIREX, i.e., the Exploitation Sub-committee, the Intelligence Collection Requirement Sub-committee, and the Data Base Working Group. The above mentioned recommendation results from these discussions.

10.2   Research Resources

10.2.1   Imagery. The prime item received in and exploited by NPIC is of course imagery. The volume, by type of collection system, received in Fiscal Years 1968 and 1969 follows:

10.3

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Collection Systems	FY 1968		FY 1969	
	No. of Missions	Film Footage	No. of Missions	Film Footage
Search System	7	206,700	8	228,900
Spot System	8	34,700	8	33,100
High Level Aircraft	298	1,293,600	273	1,312,200
Low Level Aircraft	11,961	4,294,700	15,112	5,860,000
Total	12,274	5,829,700	15,401	7,434,200

10.2.2 <u>Documents.</u> Based on data supplied by the Deputy Chief of the NPIC Library, <u>NPIC receives</u> an average of 6315 publications, reports and other such items per month <u>including those produced by NPIC.</u> 1045 items come from open sources and 5270 items come from intelligence sources. A complete breakdown of these data is included in the following tabulation. It should be noted that the usefulness ratings shown were arrived at by applying a weighting factor to the views expressed by th analysts surveyed.

TYPE	Received		Retained		Useful
	Open	Intel	Open	Intel	
Newspapers	140		2%		13
25X1 ☐	100		0		12
Periodicals	500	305	85%	98%	7
Monographs	50	300	25%	75%	11
Books	65		60%		8
25X1 ☐		100	0		9
		100	0		10
NSA Communications Intercept Reports		700		90%	5
Translations	190			3%	14
IR Attache Reports		3000		0.5%	4
SIGINT Reports		68		1	6
State Airgrams and Cables		25		0	15
NPIC OAK Reports		2		100	1
IPIR Reports		4		100	1
OAK Supplement Reports		6		100	3
Detailed Photo Interpretation Reports		660		100	2

10.5

The OAK's, IPIR's, follcwed closely by PI
detailed Reports and OAK Supplements, were rated as
the most useful of the documents received. All
previously known information on a given target can
usually be found in these reports and this facilitates
the comparing of current informat:ion against earlier
information. Three other items were ranked as fairly
useful. They were IR Attache Reports, NSA Communications
Intercept Reports, and SIGINT Reports in that order. IR
Attache Reports contain ground photography and dimensional
and descriptive information which is useful for identification
of objects photographed from the air. NSA Communications
Intercept Reports frequently provide basic information on
and clues about facilities at particular geographic areas
which lead to detailed examinations of relevant portions
of past and upcoming photographic missions. Such examina-
tions have often lead to important intelligence discoveries.
The items rated least useful were State Airgrams and Cables,
Translations, Newspapers, ☐ Monographs, ☐   25X1
25X1
☐ and Books.

These few generalizaticns can be drawn from the
responses received in answer to question 1. However, the
statistics resulting from a compilation of the responses
from the analysts surveyed turned out to be so varied and

sporadic that it was not possible to arrive at any other
meaningful or useful conclusions.

10.2.3 Control of Document Receipts. The Information
Branch of the Research and Reference Division (PSG) is
~~actually~~ the library of NPIC and it has the major respon-
sibility for controlling the volume and content of NPIC's
receipts. Based on reading requirements, levied on it by
the components within NPIC, this unit in turn levies
requirements on the appropriate producers, or sources of
the requested information. The most notable of these
producers are DIA, CIA/Cable secretariat, and CIA/CRS.
The library also arranges for the distribution to NPIC
of specific items by CIA.

All purchasing of publications is done by the
Information Branch (library) in response to requests
from the various NPIC components.

10.2.4 File Characteristics. The files maintained at
NPIC, according to the respondents, take the form of docu-
ments, reports, cables, extracts, proxies, books, magnetic
tapes, roll film and film chips. It is important to note
that there are very few, if any, personal analyst's files.
The organization files referred to are, in the main, at
the Branch level. The two principal exceptions to this are
the roll film files and the magnetic tape files. These files

10.7

are maintained by the Research and Reference Division

and the Automated Information Division respectively

and are used to service requests from components through-

out [   ] including NPIC, IAS, DIAAP-9, and SPAD.

Because all of [   ] except for the 6th floor,

is made up of vaulted working areas very few safes are

used. File cabinets, open shelves, and TAB files are

utilized to house these files.

   10.2.5 Analysis of Document Use. The types of

documents most frequently recalled from the Branch files

are those which have been produced by NPIC itself.

These consist of PI generated reports, PI Keys, briefs,

completed project reports, and film chips.

   One person listed IR Attache Reports, NSA

reports, monographs, and books as those most frequently

recalled; [   ] State Airgrams and Cables,

and Newspapers as the least frequently recalled. This

man is the only person answering the questionnaire who

uses primarily non-NPIC originated material on the job.

   One respondent whose work deals directly with

cables naturally said he wanted to recall cables.

   Among the other least frequently recalled items

mentioned are technical publications and reports other

than NPIC reports.

10.8

10.2.6 <u>Organization of Files</u>. The target files are organized by either subject and BE number, subject and COMIREX number, subject and alphabetically within subject and NPIC number.

Requirements files are filed by NPIC project number and month.

Branch files are organized by the substantive category of prime responsibility, and then alphabetically by target title within category.

Film files are stored by mission number and date, chipped film files by target title.

PI Keys and reference manuals are organized by subject.

Most of the files do not appear to be cross indexed. One or two have machine indexes.

10.2.7 <u>Maintenance of Files</u>. Maintenance of the Branch files varies but seems to depend primarily on the receipt of newer or more accurate information than that which exists in the file.

Purge criteria also varies. Reliability of retrievals from automated files was cited as one criteria; later more accurate information as another; for other files purging is sort of ad hoc at the discretion of the analyst; some are purged annually. The cables file and certain types of documents are retired to the records center when they reach

a certain age.   Information is also purged when it can

be readily obtained from another component in CIA.

Most of the files are not indexed or summarized.

The one exception is the Exploitation Products File which

is machine indexed.

The input to the Branch files is generally

determined and directed by a professional person with

about half of the files being physically maintained with

the assistance of clerical or semi-professional assistance.

Most of the respondents said they accepted inputs

to their file(s) from other organizations.   One person

estimated that about thirty percent of his Branch file

had come from outside the Branch.   Three people said their

files did not accept outside inputs.

Only one person said that non-Branch people could

not readily retrieve from his file.   Eleven said that others

could readily retrieve from their files on most subjects

but four of the 11 indicated that professional assistance

from someone in the unit would probably be required for some

types of information.

10.2.8 Underline File Uses.   These Branch level files are used by

at least some of the analysts to compare results as a project

nears completion, to verify newly derived intelligence, and

also as a cumulative history on a particular activity.   One

of the files is an index to publications where more
relevant, detailed information can be obtained. In
addition, the references cited in earlier finished reports
are quite helpful. Ten people said they used files as
a source of information required for a particular activity
such as an aid in the readout of a particular target or
for camera data or to help identify U/I facilities. Other
uses for these files cited by the respondents are: (a)
as a summary of information required for a particular
activity, (b) as a method of approach to a particular
problem, (c) to obtain dimensional information on specific
items, (d) as an authority on terminology and an assist
in preparing briefing boards and, (e) verification and
control of target data.

10.2.9 Other Files. Eleven of the people use other
files in their analysis and production activities. Five
people use the NPIC library files or other NPIC files such
as collateral support files. Five people stated that they
used the files of the USSR Division of the Information
Services Group, CRS, for film and IR Attache Reports, Intello-
fax runs, Aegis runs, and Special Register runs. One person
bemoaned the fact that the Intelligence Publications Index
is no longer published; two people use USAF/FTD files or
derivatives therefrom for information on aircraft; one person
uses USAF/ACIC files; two people use DIA files, and one person

said he occasionally calls upon the files of the Naval

Reconnaissance and Technical Services Center (NRTSC) for

reference materials.

Five people indicated that they do not provide

input to other files. Six people input to other NPIC files

including the files maintained by the library and the

automated target brief file.

Other organizational files were said to be used

for information not normally kept in the branch files.

Reasons given for not using other files at all or infrequently

follow:

(1) Branch files are more convenient and less

time is required to get needed information from them.

(2) For some things such as dimensional informa-

tion the Branch file is the only source.

(3) Branch files are more target oriented but

CRS and NPIC library files are valuable additions.

10.2.10 Products. The analysts surveyed contributed

to the production of IPIR's, OAK's, and OAK Supplement

Reports, detailed PI reports, cables, briefings and briefing

aids, and the National Base of Imagery Derived Information

(NBIDI).

10.12

10.2.11 <u>Reasons for Branch Files</u>. The reasons stated for maintaining Branch files were:

(1) They provided more timely answers.

(2) File building and maintenance is a means of professional education and it identifies those elements uniquely relevant to the individual's work.

(3) No other reference facility available.

(4) Desire of Branch Chief.

(5) Precedent.

(6) Convenience.

10.2.12 <u>Reactions to a Central File System</u>. Every analyst indicated he would use a central file system with the characteristics described in this question. However, one analyst went on to say he had never seen nor heard of such a file system.

The characteristic that was deemed to be most important was quick response and the time allowable ranged from 5 minutes to 1-1/2 days.

Another characteristic cited as being important was location and easy access to the file.

The percentage of personal files that the respondents indicated could be included in such a file varied from 0% to 25%, 30%, 60%, 90%, and 100%.

10.3 Automatic Data Processing

10.3.1 <u>Breadth of ADP Survey</u>. This series of questions
is applicable only to those analysts who are in some way
involved in or connected with one or more ADP applications.
Of the 13 NPIC analysts surveyed, 10 responded to these
questions. The applications cited by 2 of the analysts,
I would personally consider to be semi-automated systems
and not fully automated ones. Nevertheless, their responses
have been taken into account in the comments which follow.

10.3.2 <u>Applications</u>. Seventeen (17) applications were
listed and described. A number of these applications are
used by more than one analyst and therefore multiple comments
were received on them. These applications range in complexity
from the simple "semi-automated" one used by the NPIC Library
to control subscriptions of periodicals acquired by NPIC to
the very complicated, on-line, real time mensuration
systems used for the various imagery collection systems
exploited by NPIC.

10.3.3 <u>Summary of Replies</u>. The following comments
summarize the most meaningful replies to the questions posed
on the questionnaire and are keyed to the numbered paragraphs
thereon.

<div align="center">10.14</div>

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1, (a) Sixteen (16) of the applications were
credited with speeding up production and improving
the quality of the end product or service; 5 were
said to be impractical without ADP; and 1 was stated
to have eliminated the need for a hard copy report.

1, (b) Improvements suggested for these applica-
tions were:

● The response time of 3 systems should be
faster.

● More current maintenance of computer files
through on-line remote input/output terminal devices
should be implemented for 5 of the applications.
Present system requires up to 2 months before latest
mission read-outs are reflected in cne of the files
of the National Base of Imagery Derived Information
(NBIDI).

● The retrieval capability on the Installations
Data File was said to be too general and as a result
lots of extraneous information must be plowed through
to get needed information. A more selective capability
should be developed.

● The Target Prediction System should be expanded
to include weather data. Such a refinement would result
in predicting only those targets covered by interpretable
imagery and eliminate from the prediction list those

FORECAST
OR
OBSERVED??

targets that were cloud covered.

● One of the Target Prediction applications does not cover search targets and should be expanded to so cover.

● Establish direct contact between the user of the Exploitation Products File and the information analyst and eliminate requirements control mechanism that now intervenes between these two.

How about direct contact between user & file. Lets eliminate the middleman

● The reliability of one system should be improved.

● Expand and improve 4 of the applications to make them truly automatic instead of semi-automatic.

● Four of the applications were said to need no improvement.

1, (c) The most burdensome aspects of these applications were said to be:

● Reporting out information following a too rigid machine format.

● Manually purging and up-dating the file with non-mission information.

● Ineffective quality control.

● Attempting to make one application satisfy the needs of several hundred people who have

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requirements for the same basic information but
who have different work habits and methods.

- The time required by the ADP component to
program and debug one of the applications was said
to be excessive. Further, the deck arrangement
of this application was characterized as being
difficult and cumbersome and not written with the
user in mind. *Probably true*

1, (d) Every respondent but one felt that the
care and feeding of their respective applications
were worthwhile. The one who did not answer in the
affirmative stated that he didn't know whether or
not his operation had been worth the cost because
he is unable to tell what is expected of the system
now or in the near future.

2. The advice offered those contemplating
the development of an ADP application to support
their production follows:

- A thorough, overall study and analysis of
the problem should be made before designing a system
and not attempt to develop one piecemeal.

- Conduct a thorough educational program
for all users of the system insuring, as best you
can, that those people understand the system and
know how to use it.

● Insure that the system is responsive to production in a supportive role rather than the opposite, i.e., the production personnel working to serve the ADP application.

● Strive for an on-line capability.

● Insure that good communications is established between the ADP analysts and the user so as to design the best system possible.

● Continually examine the system for possible improvements.

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3. Every respondent but one said they would continue to use their current ADP applications even if they were charged for them. The analyst who answered no to this question said, "Our current files are providing us with the information we need at a much lower cost to the government." Incidentall this same analyst said, in answer to question 1, (a), that the ADP application with which he is involved had increased his component's production and helped to improve the quality of its end products.

4. The additional ADP applications recommended were:

● Automate all of the NPIC Library functions.

● Establish a more direct tie with data bases at Headquarters. *What "data bases"??*

5. The extensive, highly accurate mensuration system was cited as an essential capability that would not exist without ADP. The remaining applications were said to be possible manually but at greater cost in manpower and time, and at some loss in accuracy.

10.4 Conclusions

10.4.1 Prime Source of Information. The primary source of information for NPIC's production efforts is of course imagery. While NPIC receives and utilizes other documents and materials in the production of its end product, such materials are used ~~merely~~ in a back-up or assist capacity in the exploitation of imagery, never as a prime information source.

10.4.2 Volume of Non-imagery Materials and its Control. The volume of the materials (other than imagery) received in NPIC is relatively small and the great bulk of such receipts is acquired through and controlled by the NPIC Library operating on the basis of requirements received from other components of the NPIC. This system appears to work well and appears to be efficient.

10.4.3 Branch Files. There are some, but very few, Branch files maintained of these materials, practically no individual files. The great bulk of such materials retained by NPIC are physically kept in the files of the library and requests by NPIC analysts for information on

documents subsequent to initial distribution are serviced
from these library files.

10.4.4 Installations Data File. The most useful
and productive ADP application at NPIC is said to be the
Installations Data File formerly known as the Targets
Brief File. This file is used in and is essential to the
efficient operation of first and second phase exploitation,
(OAK, IPIR, and OAK Supplement production).

10.4.5 Exploitation Products File. The Exploitation
Products File formerly called the All Source File is
characterized as being very important to the third phase
exploitation (detailed PI report production).

10.4.6 Mensuration Parameters File. The Mensuration
Parameters File which makes possible the highly accurate
mensuration system at NPIC was cited as an essential
capability that would probably not exist without ADP.

10.4.7 Evaluation of ADP Support. While there were
some serious criticisms expressed of the ADP support provided
to NPIC by the Automated Information Division it was felt
by every respondent that their ADP applications were worth
the work involved.

The deficiencies cited in and the improvements
suggested for the NPIC ADP programs seem to be the usual
ones, i.e., response time frequently too slow and should be
speeded up; file maintenance not kept current; retrieval

capabilities not selective enough, etc.

The Integrated Information System which is
in essence an up-dating of the major portion of the NPIC
ADP capability should, when it becomes operational,
alleviate and possibly eliminate the great bulk of the
deficiencies noted in the NPIC ADP programs. In addition,
it should also further reduce the amount of materials
kept in Branch level files which in my opinion are con-
siderably less in volume than one might expect in an
operation the size of NPIC.

10.5 Recommendations

10.5.1 NPIC. As stated in the Conclusions, above,
NPIC currently has its full share of problems in the
ADP field. It is expected, however, that when the
Integrated Information System (IIS) becomes operational
(scheduled during first quarter of FY 1971) most, if not
all, of these problems will be alleviated and/or solved.
This is not to say that NPIC should then set back and be
satisfied with its ADP posture. Rather, as soon as possible,
after declaring the IIS operational, NPIC should devote a
continuous effort to expand, improve, and update the system.
The management of the Automated Information Division, NPIC,
recognizes this and has identified a number of improvements
which they plan to accomplish in the future. Among these

are the following:

(1) Provide both FORTRAN and COBOL
programming capabilities at upwards of 100
terminal devices to NPIC professionals through-
out the Center. Such capabilities will permit
the computers to help solve specific problems
encountered by these personnel in their particular
areas of professional expertise.

(2) Continue efforts to develop a capability
to search free text of documents.

(3) Expand the ADP support to the NPIC
research, development, and engineering work of
NPIC. In the past, little such support was possible
because of the priority need to develop and implement
the IIS.

(4) Continue to place emphasis on the need
to improve the job priority structure, to optimize
the utilization of random-access mass storage, and
to seek a better method for using the two central
processors and associated core.

10.5.2 Comirex. The Exploitation Subcommittee and
the Data Base Working Group for the Comirex have been in
existence now for approximately 2-1/2 years. During this
time these two activities have accomplished a lot of good
basic work.

How about to support to the various PSG functions, especially film can handling & publication services?

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The Exploitation Subcommittee has, for example, provided valuable leadership in the development of the National Imagery Exploitation Target Base (NIETB) and in identifying the essential elements of information that are potentially derivable on these targets from imagery. In addition, this committee has identified the requirements that should be satisfied during first and second phase exploitation.

The Data Base Working Group has provided valuable leadership in the development of the National Base of Imagery Derived Information (NBIDI) including identification of the files that make up the NBIDI, i.e., the Installations Data File, Objects Data File, Exploitation Products Data File, Area Coverage Data File, Mensuration Parameters File and the Imagery Interpretation Resource File. In addition, the Data Base Working Group developed a concept of computer service centers (one each in NPIC, NSA and DIA) to ensure that the information in the NBIDI is readily available to the users throughout the Intelligence Community.

We are concerned that the present lines of activity show signs of developing a series of bureaucratic trenches rather than identifying and extending a national photographic

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interpretation reference system. Future plans of these
committees should be carefully reviewed by Comirex to see
if the need to continue them still exists. Alternatively,
it might be more appropriate to allocate such responsi-
bilities as are still resident with them to the line
organizations involved.