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, WASHINGTON

WORKING PAPER
Destroy or Control

July 24, 1971   by _1 Sept 71_

MEMORANDUM FOR

      Honorable David Packard, Deputy Secretary of Defense
      Honorable Richard Helms, Director, CIA.

SUBJECT: Memorandum to the President on FROG and EOI

Attached is a draft memorandum to the President on FROG
and EOI which I offered to prepare at our July 13th meeting.

If you will let me have your comments, I will have the
memorandum prepared in final form.

                                   Ed

                         Edward E. David, Jr.
                         Science Adviser

Attachment

BYE 11954-71

This document consists of _1_ pages
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DRAFT MEMORANDUM TO THE PRESIDENT

This memorandum presents an issue for decision between two

alternative systems for photographic reconnaissance. The unique feature

of these systems is that they are capable of returning images to Washington

for review within a day. Thus one or the other is vital for crisis manage-

ment and for any sutiation where timely intelligence is important. A

choice between the two systems is desirable because of their costs on

the one hand, and on the other because of their comparable capabilities.

The two systems are (1) a modification of a current reconnaissance satellite

known as GAMBIT (KH-8), and (2) an entirely new satellite using advanced

technology. In this memorandum we refer to these two systems as

(1) Film Readout GAMBIT, abbreviated FROG, and (2) Electro-Optical

Imaging, abbreviated EOI.

There are many differences between the two systems but the most

significant for your consideration are as follows:

1. In baseline programs, FROG can be available for launch in

February, 1974; EOI can be ready for launch in June, 1976. These two

dates assume the same level of development risk regarding schedule

slippages and cost overruns.

or shortly thereafter.

1. <u>Build only EOI on a schedule that would have it
operating in 1976.</u> Our planning for the last two years has
been based on the assumption that we would proceed along
these lines if the EOI technology programs proved
successful. The technology has now been demonstrated and
we are ready to start this development. This program would
give us a system which includes the highest level in current
technology and offers growth potential for the future: a
system that would satisfy our needs for crisis reconnaissance
and indications and warning surveillance, enhance our
technical intelligence capability and – after the develop-
ment is complete – allow an overall reconnaissance program
with about the same operating cost that we have now with
Gambit and Hexagon but with much greater capability. It
will also enhance our capabilities to monitor a SALT agreement
and can, if desired, support overseas tactical commanders
by sending them photos of their local area of interest as
the pictures are being taken. In order to keep the
reconnaissance budget at a reasonable level we would
restrict this development to a maximum of ☐ in any
one year. This funding limitation causes the schedule to *be*
~~be extended from the original June 1975 operational date to~~
at the earliest
mid-1976. ~~It is therefore a higher confidence schedule.~~

*It must be remembered it can not
see through cloud cover nor at night and
will therefore be of limited value in certain
circumstances.*

This course of action would mean that we would continue

to rely on our present photographic reconnaissance satellites,

Gambit and Hexagon, and our aircraft to cover any crisis

situation that might occur ~~through 1975.~~ *between now and 1974 or*

whenever the EOI can be made operational.
We recommend this course of action. With Hexagon

becoming operational, the current program for Gambit and

Hexagon together can provide photographic satellites on

orbit about 300 days of the year, and although their low

orbits and film return delays will not allow daily access

to all targets or quick return of the data, they are vastly

superior to what was available last summer during the

Middle-East Ceasefire. We would prefer to live with this *online capability*

capability ~~through 1975~~ *until 1974* than attempt an ~~interim 12 to 18~~

with KROG,
~~months improvement which would jeopardize the availability~~

~~of EOI.~~

If, however, you consider it important enough to try to

get a readout capability for crisis reconnaissance earlier

than 1976, the following alternatives are possible:

2. Accelerate the EOI schedule with the possibility of

getting it by late 1974.

This course would cost ▭ in FY 73 and ▭ more

in FY 74 than Option 1 and a total of ▭ more through

FY 77. Dr. Land and his Panel* believe this is a feasible

*The Land Panel report is attached as Attachment 3.

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thing to do and would recommend this course. We, however, would prefer to live with the lower budget levels and higher confidence schedule of Option 1. We would recommend this approach to getting early availability over either 3 or 4 below. / *Continue plan which is my budget* /

3. Initiate both FROG and EOI developments.

This is the plan that we ~~are concerned about from a budgetary standpoint~~ *have approved for the FY 1977 budget*. It would have FROG in operation in early 74 and EOI in operation in 76, ~~thus giving~~ *or shortly thereafter,* an interim improvement to crisis reconnaissance ~~two years earlier than Option 1 and one year earlier than Option 2.~~ *This option would give at the earliest possible date.* It would, however, increase the reconnaissance budget over the next five years by about [   ] and in view of the concern of Congressional leaders ~~and~~ *it as now* our belief that we could not realistically support this budget level over a period of years, we do not recommend this approach.

4. Initiate development of FROG now and ~~hope to~~ *delay the* start *of* EOI development ~~in~~ *until* 73 for possible operation in 78.

This would give us an interim readout capability in 74 but put off - ~~perhaps indefinitely~~ *for several years* - the much greater performance ~~and long-term economics~~ of EOI.

Under this option, we would have to make a decision in 1973 to start EOI development. At that time, because of the operational costs of the FROG program, the budget

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levels facing us in the subsequent years would be about
as high as those which are now causing us to recommend
against building both EOI and FROG today. If these levels
seem prohibitively high now, it is likely that they will
seem equally so in 1973. Even if we were able to hold
to this decision in spite of the high budgets, and launch
into the EOI development in 1973, over the five years
between FY 72 and 77 the total FROG-EOI program would
cost [blank] more than an EOI only program (Option 1). Through
1980 it would cost [blank] more and it would delay the time
when we could phase out Gambit and realize additional savings.

We think that the selection of this Option would in
effect be a decision to postpone EOI indefinitely. In view
of the potential of EOI, we do not recommend this course of
action.

Summary

In summary then, we recommend Option 1, an EOI
development for operation in 1976. We believe that Option 3,
the concurrent development of FROG and EOI, is impracticable
from a budgetary standpoint and, if started, would inevitably
lead to pressures which would cause the termination of one
of the two programs in the next few years. Likewise, we

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do not recommend Option 4, which would defer the start of

EOI to 1973, because the budget levels after 1973 are

as serious as those we now find prohibitive in Option 3.

Therefore, Option 4 would probably have the effect of

deferring EOI indefinitely.   In view of the improved

coverage that we will have in 1974 and 1975 by Hexagon

and Gambit, we do not recommend jeopardizing the early

availability of EOI in order to get an earlier readout

capability by one or two years.

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