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~~18~~ NATIONAL RECONNAISSANCE OFFICE

WASHINGTON, D.C.



THE NRO STAFF

25 July 1974

MEMORANDUM FOR RECORD

SUBJECT: HEXAGON Metric Pan-Option Review Meeting

BACKGROUND

When, in 1972, it became obvious that the current buy of 12 HMC's would not acquire all the coverage DMA required, new collection options were developed. One scenario evolved around the HMC (mainly pushed by DMA-TC) another around a metric pan concept (mainly DMA-AC and some adherents from DMA-Hqs who had transferred from DMA-AC).

In August 1972, the NRO requested DMA-Hqs to perform a study (to be completed by May 1973) evaluating both approaches from a requirements point of view. The study was undertaken but was not completed until August 1973. Its principal result was a preference for a metric pan system if accuracies could be met and enough film was available.

The July 1973 ExCom decided that no further NRO funds would be spent on DMA camera after the exhaustion of the current buy of 12 HMC's. The ExCom did agree to perform pertinent studies in cooperation with DMA to determine which approach (pan or frame) would be best technically for the future.

Two NRO studies were subsequently performed. One by Lt Col Al Taylor, SS-4, investigated the coverage mix options, over time, as a function of DMA requirements by priority. This study was completed in May 1974. The second study was initiated by SS-7 and involved the technical capability of the HEXAGON pan system to be modified to accomplish the MC&G mission. The item at issue was attitude accuracy and precision of the focal plane during exposure. This was

HEXAGON

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completed in May 1974 and briefed at Sunnyvale on 26 June 1974 to LMSC, SP-7 (Berganini), NRO (Peake), DMA [redacted] and PE (Charlie Karachis(sp), Vic Abraham). Copies of the briefing aides are attached. A formal report won't be written at this time due to time and cost problems.

CURRENT SITUATION

Of the four alternatives at the 26 June meeting, the so-called solid state stellar (S³) camera was recommended. PE later estimated total costs including LMSC integration at less than \$20M. This was much lower than the \$30-50M estimated with other techniques considered earlier. The S³ also involved a relatively high risk because it had not been done before, and it involved an in-flight calibration of the pan camera using stars with the bird rolled over on its back. While the latter had been attempted with the HMC it hasn't been successful yet.

Review

The second most likely alternative involved attaching stellar indexing cameras with their own film path; with the pan camera, ~~their risk due to technical capability~~ is much lower here ~~all components exist; however, bucket take-up and additional film paths are required. This means greater risk to the existing systems over all and more total cost (\$20-30M).~~ The final conclusion at the meeting (26 June 1974) was that a metric pan was possible at the accuracies desired by DMA. This was contrary to previous predictions, but it is a unanimous judgement of all present.

At the July 74 ExCom the decision not to fund future MC&G camera requirements out of NRO resources was reaffirmed and the decision on a fourth block of HEXAGON systems was left open.


DISCUSSION

At this point in time the issue of a metric pan is academic, unless another buy of HEXAGON systems is made. If it is, DOD can fund either hardware system they choose.

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Assumming DMA can demonstrate enough advantage for the metric
pan to warrant the risk to the pan system primary mission,
the route is feasible. Chines copies of the HMC is the
back-up option. In either case they pay.


HAYDEN B. PEAKE
Lt Colonel, USAHANDLE VIA
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