~~TOP SECRET~~ OPN B-32(3)

HANDLE VIA BYEMAN CONTROL SYSTEM

NATIONAL RECONNAISSANCE OFFICE

WASHINGTON, D.C.

THE NRO STAFF

4 June 1971

MEMORANDUM FOR [redacted]

SUBJECT: TAGBOARD Collection Satisfaction

In order to provide an evaluation of the potential application of any future TAGBOARD missions, Dr. Naka has requested that a staff study be prepared for presentation to Dr. McLucas. The study should evaluate potential need for--and contributions to be expected from--potential TAGBOARD missions. Dr. McLucas would use this as a background or possible justification of continued TAGBOARD development and in his discussions with EXCOM.

You are encouraged to discuss the subject with Col Hartley in Program D.

Please give me an indication of when you could complete this evaluation of the possible contribution of TAGBOARD to collection satisfaction.

[redacted]

Cy for: [redacted]

TAGBOARD

# POTENTIAL APPLICATION

# OF

# TAGBOARD DRONE MISSIONS

## POTENTIAL APPLICATION OF TAGBOARD DRONE MISSIONS

The greatest potentials of future TAGBOARD missions is the vehicle's ability to operate without a human pilot at the controls; its capability to photograph denied areas of impending crisis, and to supplement satellite photography in bad weather areas such as South China, and North Korea during those short periods when the weather conditions are favorable for overhead photography.

The recent USIB study "Intelligence Requirements for Crisis Response Satellite Imagery FY 1973 - FY 1975 Time Period," reports that there are approximately three to five critical situations occurring annually, of which two generally occur simultaneously at two separate parts of the world; that a crisis response capability is necessary to provide coverage on a daily basis for as long as a month, and sometimes longer, and that the greatest number of intelligence requirements involve installations or small areas demanding imagery readout of 2-3 feet ground resolution. The study also indicated that buildup time to a crisis extends from two to greater than 190 days, and critical periods extend from four to 45 days.

Past experience with photo satellites show that there have always been some areas of intelligence interest (China-South China, North Korea, etc.) not successfully photographed because of orbital or camera constraints, or as in most cases, poor weather conditions. The combination of these constraints has sometimes resulted in low satisfaction of USIB requirements. For example, a typical GAMBIT mission would access Wuchai SSM launch site approximately every 6th or 7th day. A HEXAGON mission would access Wu-chai approximately every 7th or 8th day. Although an area may be accessed sufficiently, the fixed orbital path and the poor weather conditions as shown in Table I may prohibit the area from being successfully photographed during an entire satellite mission. Since crisis periods extend from four to 45 days, according to the USIB study, the events could have terminated or exploded beyond control before satisfactory satellite photography could be obtained and read out. Also, the quarterly satellite launch schedule, and the long crisis response time to launch a GAMBIT (up to 25 days depending on vehicle status), and currently no crisis response capability for the HEXAGON, may cause the perishable product of current intelligence and the opportunity of the moment to be lost forever.

Most crises involve installations or small areas, and are of short duration. Their photographic exploitation is dependent on favorable target weather and the capability to react in sufficient time. Although the U-2R and SR-71 aircraft and TAGBOARD drones are effected by the same weather conditions as satellites, their quick reaction times enable them to better exploit short periods of good weather conditions to meet crisis requirements, or fill intelligence gaps in satellite photography.

From Table II, the response times of the SR-71 and U-2R aircraft, both of which produce the recommended photo imagery of 2-3 feet ground resolution, are currently the best platforms for crisis response. These platforms, however, place a human pilot in possible jeopardy in the event of retaliation by the country of concern. Lately there have been both diplomatic (North Korean protests and threats of retaliation against future GIANT SCALE shallow and deep penetration overflights), and aggressive reaction (Soviet defense fighters vectored against GIANT SCALE missions south of Vladivostok over the Sea of Japan.) Considering all the ramifications that could occur in the event of a United States reconnaissance pilot being captured in denied territory, the TAGBOARD drone appears to be the most suitable platform (current five-day launch capability and reliability notwithstanding) for operation against crisis response and outstanding USIB requirements until such time as NRT satellites are available.

TABLE I

| COUNTRY | PROBABILITY (%) OF SEEING A POINT TARGET AT 1200 HOURS LOCAL TIME: BEST MONTH | WORST MONTH | ANNUAL | USIB SATISFACTION (%) OF NATIONAL COMIREX TARGETS*: QUARTERLY | SEMI-ANNUAL |
|---|---|---|---|---|---|
| South China | 38.2 (Dec) | 19.8 (May) | 29.6 | 31 | 43 |
| China (Other) | 54.2 (Dec) | 33.7 (May) | 44.2 | 48 | 65 |
| North Korea | 63.1 (Jan) | 21.0 (Jul) | 43.6 | 38 | 84 |
| North Vietnam | 29.4 (Dec) | 18.1 (Mar) | 23.7 | 70 | 90 |
| Middle East | 93.8 (Jul) | 62.1 (Dec) | 75.1 | 25 | 39 |
| E. European Bloc | 43.8 (Jul & Sep | 18.5 (Dec) | 33.0 | 43 | 52 |

Note: * As of 30 June 1971. Does not include HEXAGON Mission 1201.

TABLE II

RESPONSE TIMES

| PROGRAM | RESPONSE TIME |
|---|---|
| GAMBIT* | Up to 25 Days |
| HEXAGON* | None at this time |
| SR-71 | 56 Hours Worldwide<br>24 Hours from O/L |
| U-2R | 50 Hours Worldwide<br>24 Hours from O/L |
| TAGBOARD | 5 Days<br>24 Hours on Extended Hold |

Note: * Assumes no system on orbit at the time




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