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ORD-0417-76

19 February 1976

MEMORANDUM FOR THE RECORD

SUBJECT: Bird Camera/NPIC Support

1. This memo covers the period between 5 February 1976 and 19 February 1976 regarding the progress for developing and testing a bird camera. Memos dated 16 December 1976, 5 January 1976, and 5 February 1976 describe earlier progress.

2. A dummy configuration of the latest camera and timer has been sent to [redacted] for testing compatibility with the bird and harness.

3. Camera #1, modified for image motion compensation, was received and tested against moving targets (resolution chart on a car) at distances of 50 and 100 feet and velocities from zero to 50 mph. The results of this test showed proper motion compensation. The negative aspects of the test were:

a. A small hairline crack in the camera case caused occasional fogging (about 10 percent of pictures).

b. In 1 or 2 percent of the pictures, the shutter stuck open causing over-exposure.

c. The center of the field of view was slightly defocused, whereas the edges (which are clamped) showed good focus.

The camera has been sent back to [redacted] for correcting these problems. At this time, the solutions to these problems appear to be straightforward.

4. There still appear to be problems in developing 3414 film per Kodak's instructions, especially with regard to pulling the developer to compensate for varied lighting conditions. Also, the supply of film in 16mm format is exhausted, and I feel that the film slicer is too risky an operation when

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used by people unfamiliar with the equipment. On 9 February 1976 a meeting was held with [redacted] of NPIC to discuss assistance in dealing with the above problems and also in obtaining good quality enlargments of selected negatives. The advice of NPIC at that time was for us to request assistance from OTS. However, on 18 February 1976, a second meeting was held with [redacted] of NPIC who suggested that NPIC could, and would, assist in a variety of areas. The following assistance and recommendations were offered:

a. NPIC will develop all film and make proper adjustments for varied lighting conditions.

b. [redacted] advised that we also conduct tests with 5069 film to permit good resolution under lower light levels and still use the fast shutter speed to minimize motion blurring.

c. NPIC will task Kodak to provide 16mm format film so that unnecessary handling and slicing in-house can be eliminated. [redacted] estimated that he may have some 16mm film delivered in about a week.

d. NPIC will provide good quality enlargments of selected negatives.

e. NPIC will provide technical assistance in determining resolution capability and does not necessarily require a resolution chart in the field of view.

5. At this time, I feel that all problems are fairly well in hand. A refitted camera is scheduled for delivery next week and tests will be conducted during the first week in March. Hopefully, NPIC will develop this film and provide

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advice on handling in the field and film selection for subsequent tests. The new F2.5 lens from [redacted] is on schedule for delivery in early March. It is expected that a simulated field test will be conducted in mid March at [redacted] facility near [redacted] Some film will be developed there so that any further camera problems can be dealt with directly by [redacted] I would estimate at this time that a second flight test will be in order for early April which will also test the new F2.5 lens system.

[redacted]

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