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ORD 0647-76

15 March 1976

MEMORANDUM FOR THE RECORD

SUBJECT : TACANA TCT Meeting of 20-21 February 1976

ATTENDEES : [redacted] TCT Chairman
[redacted] TCT Vice-Chairman
[redacted] TCT secretary
[redacted] /ORD
[redacted] /ORD

Observation of TACANA Training Methods

On 20 February, 9:00 a.m., the TCT members met with [redacted]. Two flocks of pigeons are housed [redacted] and these pigeons are being trained to fly a dog leg and then return to their home loft. [redacted] had placed the simulated target in a parking lot [redacted] which was approximately 250 yards from the home loft. The flocks were transported approximately one half mile away and released to fly to the target and then return to their loft. The first kit consisted of the older birds which [redacted] had used at the [redacted] demonstration. Four of the birds did not perform well on this particular flight. For some unknown reason, two of them flew to the [redacted] ranch which is located 8 miles from [redacted] The other two remained in the local area and flew in with the second flock when it was released. The second kit which consists of younger birds flew almost directly to the target after ringing up high enough to be able to see it. The target was approximately 50 to 75 feet higher than the release point and the birds were forced to circle up to an altitude where they could spot the target and then fly to it.

During the course of the day, the birds were flown four times with the target being moved around to new locations in the parking lot and the birds also were released in different directions from the target. As the trials progressed the birds got progressively better. The older birds that had remained and flown correctly in the first flight of the morning required very little if any time to orient themselves to the target when it

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was within line of sight. In fact, on one release which was slightly above the target, the older birds upon release from the cage, flew straight to the target without deviation, received their reward and returned to the home loft. On that same flight which was the last flight of the day, the younger birds made approximately two circling flights and then homed directly to the target and returned to the loft.

At this point in the training the birds are still being rewarded at the target. Later the reward will be eliminated at the target so that the birds will learn to fly in an orbit and cris-cross pattern over the target before returning to their home base. The target is currently located close to the home base so that when a pigeon flies directly from the release point to the home loft without appearing at the target he is not reinforced which causes him to return to the target again and then to the home loft where he is finally rewarded. This is done to insure that the flight to the target and orbiting behavior is firmly established.

In general, the TCT was pleased with the flight performance of the Avian assets during this demonstration. It was gratifying to see the birds flying to the target from a considerable distance with very little error. Prior to the meeting and telephone discussions with [redacted] it was thought that the team would be able to observe flights of only about a few hundred yards. However, by the time the TCT arrived in California the birds were flying from approximately three quarters of a mile and [redacted] indicated that he felt it would not be difficult to take the birds out to a mile or two. This discussion arose after several flights and it was decided not to try the greater distance because the birds appeared to be partly satiated and their performance might prove to be erratic from the greater distances which in turn might weaken their response patterns for the next day or two.

On completion of the demonstrations at [redacted] the team traveled to [redacted] ranch in [redacted] The purpose of this visit was to show [redacted] the updated pigeon facilities at the [redacted] ranch. [redacted] has obtained

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approximately 90 pigeons and has installed several new lofts at the ranch. It was learned at the ranch that when older birds are obtained, (birds raised by someone else for five months or longer) they do not perform well from the outset of the initial stages of operationally oriented training. For example, when one flock of twenty older birds which had been located at the ranch for approximately three weeks was released for exercise purposes, only six birds returned to the loft after the exercise period. Later, when the six birds were flown again only three birds returned to the loft at the ranch. These birds seem to be steadfastly fixed on the ranch now. [redacted] feels that this behavior on the part of the older birds reinforces his theory that successful operationally oriented training can only be accomplished with younger birds. He has another flock of older birds which he is allowing to become acclimated to his ranch for a longer period of time before releasing them.

The findings of [redacted] research activities to date can be summarized as follows:

(1) It is important to begin training operational forms of behavior with young birds. That is to say, with birds that have either been raised from the egg or have not been exercised by someone else.

(2) Using [redacted] techniques, it is quite possible to move the birds from one location to another. For example, the original kit of birds used at Point Loma have now been moved six times to new locations. Each time they are moved, it takes a fewer number of days for them to become acclimated to their new home position. It appears that they are homing to the loft rather than to the site.

(3) The fifty mile range for homing does not appear to be a problem. The birds have already homed from 44 to 46 miles while carrying 37 gram payloads.

(4) On a preliminary look, it appears as though the A, B, c dogleg is well on the way to being established in the training process. The target is currently situated very close to the home loft, but within approximately two weeks a new and larger target (20 foot in diameter radome cover) will be obtained and relocated in increments of 15 to 25 to 30 miles from the home loft location. At that time the ultimate mission oriented training will be in the final stages.

Discussion of Project Schedule

On Saturday, 21 February 1976, the TCT and [redacted] and Mr. Reiser met with [redacted] to discuss future activities of the project. The primary purpose of this meeting was to be certain that [redacted] understood the milestones included under the Avian project schedule and to determine if there might be ways in which that schedule could be speeded up slightly. As a result of these discussions, [redacted] agreed not to move the birds in California anymore. It was felt that the number of moves that he has already made with the various kits has clearly demonstrated the feasibility of numerous moves to new locations and that it was now more important to establish the mission behavior in the birds so that the project could progress more rapidly to the operational testing stage. It was reconfirmed that the intent of the move to [redacted] Oklahoma was to complete an interim test of the operational scenario. [redacted] agreed that it should be possible to adhere to the existing project schedule and was relunctant to promise an earlier completion date. The schedule [redacted] is currently adhering to is as follows: March 1 through April 3 the training required to cause the birds to fly to a target two or three miles away from the release point, orbit, and then home to a home loft located at least 25 miles away from the target will be completed. On 5 April through 21 May the project will relocate to [redacted] Oklahoma and an interim test of the entire operational scenario will be performed. The final test of the operational capability of the Avian assets will occur between 24 May and 25 June.

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[redacted] agreed to remain in California until 23 and 24 February to search for site locations for the new radome type target. [redacted] requested [redacted] to contact the TCT as soon as the A, B, C behavior was clearly established. At that time, we would anticipate returning to California to observe that performance and complete preliminary California testing of the Avian capability.

Camera Development Progress through 19 February 1976

One dummy configuration of the latest camera and timer was presented to [redacted] during the TCT meeting for testing with the bird harness. Camera number 1 was modified for image motion compensation by the contractor was returned and tested against moving targets (resolution chart on a car) at distances of 50 and 100 feet and volocities from 0 to 50 miles per hour. The results of this test showed proper motion compensation. A number of negative aspects of the test were as follows:

(a) A small hair line crack in the camera case caused occasional fogging (approximately 10% of the pictures).

(b) In one or two 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] to enable him to correct these problems. There still appear to be problems in developing 3414 film as per Kodak instructions, especially with regard to pulling the developer to compensate for varied lighting conditions. Since the supply of film in 16mm format is exhausted, and using the film slicer is a risk when accomplished by people unfamiliar with the equipment, a meeting was held with [redacted] of NPIC to discuss the possibility of obtaining NPIC assistance in dealing

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with the above problems and also to obtain their assistance in developing enlargements of selected negatives. As a result of the meeting with NPIC 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 tests be conducted with 5069 film which permits good resolution under lower light levels while still using 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 would have some 16mm film delivered in approximately a week.

(d) NPIC will provide good quality enlargements of selected negatives.

(e) NPIC will provide technical assistance in determining resolution capability and does not necessarily require a resolution target in the field of view during flight testing.

At this time, the camera development problems appear to be under control. A refitted camera is scheduled for delivery during the week of February 23 and tests with it will be conducted during the first week in March. NPIC intends to develop this film and provide advice on handling the film in the field during subsequent tests of the camera. The new F 2.5 lens [redacted] is on schedule for delivery in early March. It is expected that a simulated field test will be conducted in mid-March at the [redacted]. Some film will be developed there so that any further camera problems can be dealt with directly by [redacted] It is estimated that a second flight test to be conducted in early April will provide a comprehensive test of the new F 2.5 system.

[redacted]

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