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ILLEGIB

DEFENSE INTELLIGENCE AGENCY
WASHINGTON, D.C. 20301

[redacted]

9 October 1970

C-1141/XX-2

SUBJECT: Data on U-2 Camera System

TO: Director, National Photographic
Interpretation Center
25X1 ATTN: [redacted]
Washington, D.C. 20505

Per your request, enclosed is a copy of the data on
the "B" configuration which was submitted for release
25X1 to the [redacted]

FOR THE DIRECTOR:

25X1

1 Enclosure a/s (U)

[redacted]
Acting Chief,
Support Division
Special Activities Office

Declass Review by NIMA/DOD

DIA review(s) completed.

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KC-73B CAMERA CONFIGURATION
("B" Configuration)

GENERAL DESCRIPTION - The "B" configuration consists of a thirty-six inch focal length, eighteen by eighteen inch split format, high resolution reconnaissance camera designed to provide continuous still picture coverage of an extremely large area. Two modes of operation provide the following ground coverage:

Mode a. Vertical to right horizon using four lens positions (V, 1R, 2R, 3R)

Mode b. Vertical to left horizon using four lens positons (V, 1L, 2L, 3L).

GROUND COVERAGE - Attachments 1 and 2 illustrate the ground coverage and the lens scanning pattern of each mode.

TECHNICAL CHARACTERISTICS

1. Format - 18 x 18 inches (in two 9 x 18 parts on separate rolls).

2. Film

   Capacity - 6500 feet thin base on each of two rolls.

   Width - 9 1/2 inch Estar thin base.

3. Lens

   Type - Aspheric

   F/stop - f/10

   Focal length - 36 inches

4. Shutter type - Between the lens.

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5. Lens positions -

3R - 73.5 degrees

2R - 49.0 degrees

1R - 24.5 degrees

V - 00.0 degrees

1L - 24.5 degrees

2L - 49.0 degrees

3L - 73.5 degrees

6. K factor - 50,000 ft.

7. Altitude - K factor plus altitude from frame titling data.

DATA PRESENTATION - The data recorder is comprised of a double lens housing assembly and an instrument housing assembly. The instrument housing contains a four-digit resettable counter and a manually wound twenty-four hour clock. There is space on either side of the counter to write in additional data such as date, flight number, etc. The vertical indicator light assemblies expose a round dot on the outboard edge of both film strips each time the oblique head is vertical. There is a right and left oblique position indicator unit, one for each film strip. The data recorder information and film format are illustrated in attachment 3.

IMAGE ORIENTATION -

1. Film Negative:

a. The camera exposes an 18 x 18 inch area on two lengths of 9 1/2 inch wide thin base film moving in opposite

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directions across a vertically mounted platen. The lens is mounted with it's optical axis parallel to the platen, and the image path is bent 90° at the exit pupil by a 45° mirror. The lens and mirror assembly rotates on a horizontal axis which passes through the center of the inclined mirror and the platen.

b. The lens-mirror combination reverses the image end-for-end and side-to-side. When matching halves are viewed emulsion up with the data block at the top, the image on a vertical exposure is oriented properly facing toward the line of flight.

c. Obliques to the right will be facing 24.5°, 49° and 73.5° to the right of the flight path and left obliques will be inclined similarly to the left.

d. Details of the format presentation and recorded data are shown in attachment 3. The sides of the format do not appear perfectly straight on the negative because of the concave distortion produced by the dished contour of the platen.

e. Positive transparencies contact printed emulsion to emulsion are in proper orientation when viewed through the back, emulsion down. For proper orientation it is necessary to expose a contact paper print with the negative back facing the print. Projection printing is oriented by projecting back of negative to print emulsion.

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2. Ground Orientation - The designation "9R" is for the film covering the right half of the ground image and "9L" for the film covering the left half of the ground image. The physical position of the film in the camera is opposite to this designation when viewed from lens end, facing forward.

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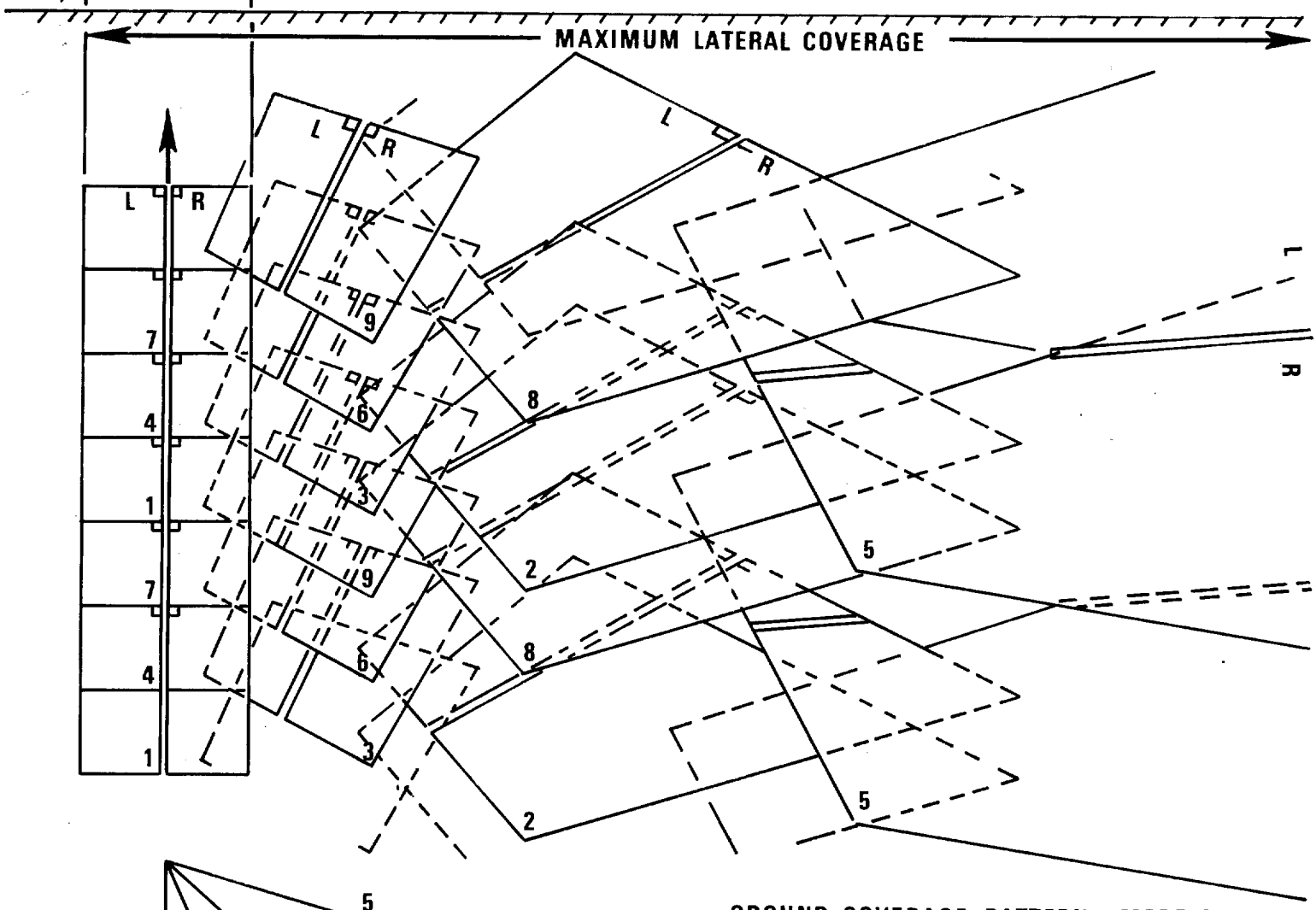
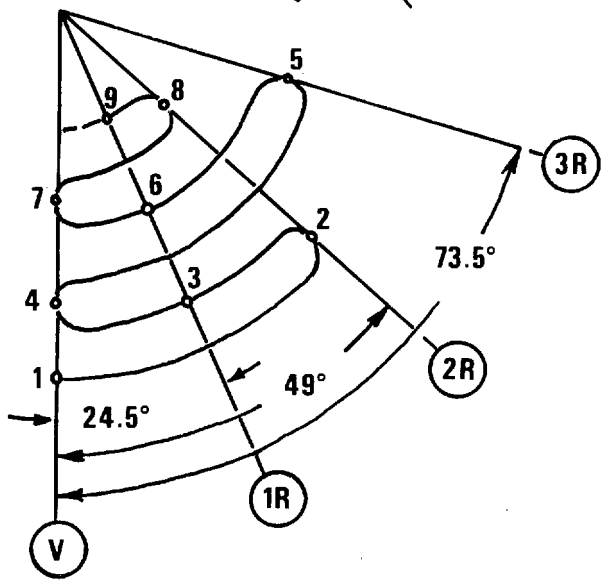


GROUND COVERAGE PATTERN - MODE A



SEQUENCE OF LENS POSITIONS - MODE A

GROUND COVERAGE AND LENS POSITION SEQUENCE - MODE A

ATCH 1

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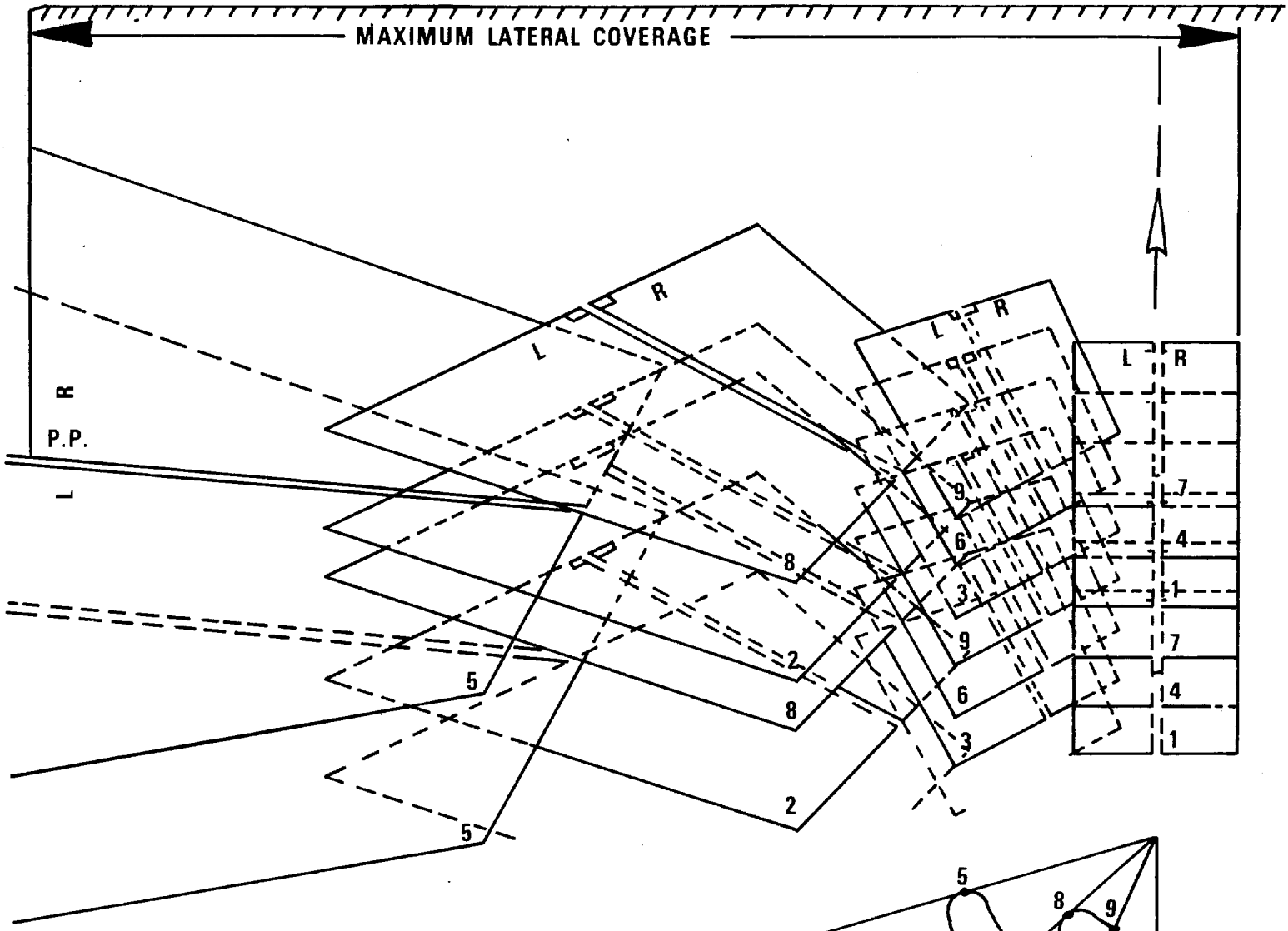
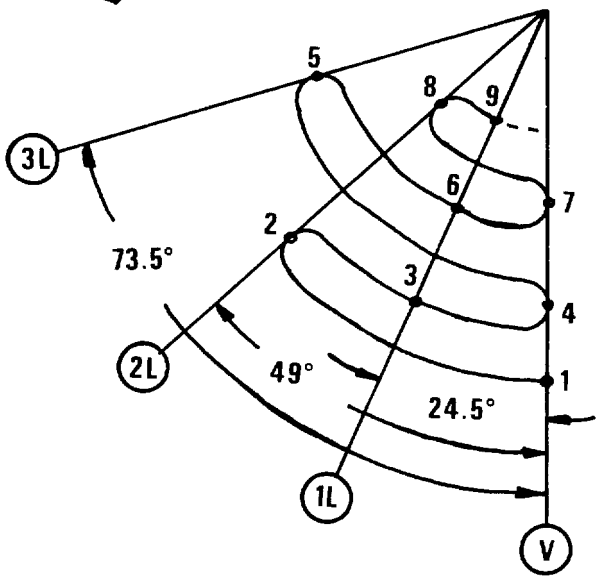


GROUND COVERAGE PATTERN - MODE B



SEQUENCE OF LENS POSITIONS - MODE B

GROUND COVERAGE AND LENS POSITION SEQUENCE - MODE B ATCH 2

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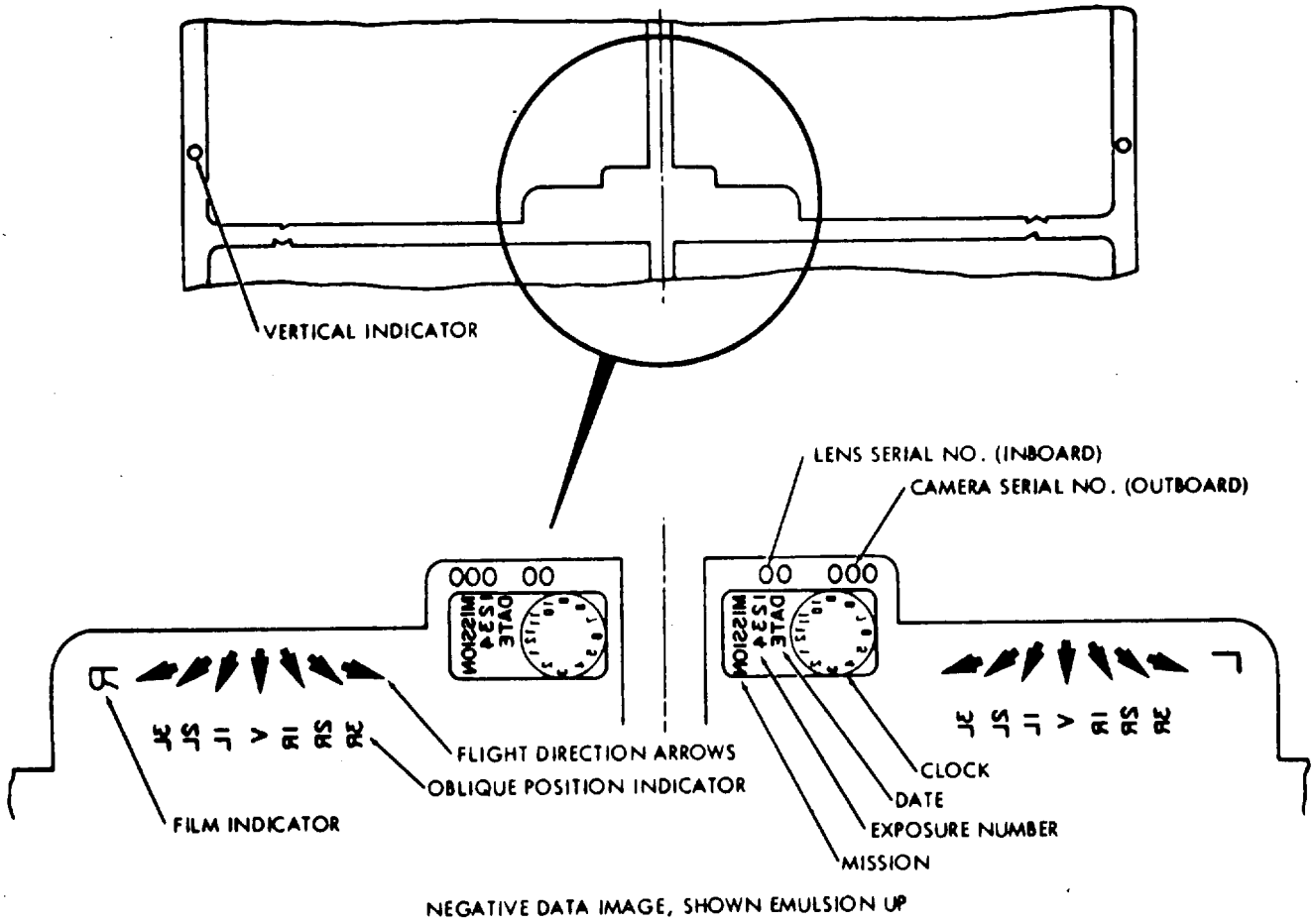

NEGATIVE DATA IMAGE, SHOWN EMULSION UP

. Data Presentation

Atch 3

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CENTER ROUTING SLIP

FROM	DATE
DIA	10/15/70

TO		INITIALS	DATE
DIRECTOR	4	CAC	10/16
DEP/DIRECTOR	3		10/14
EXEC/DIRECTOR	2		10/15
SPECIAL ASST	1	M	10/15
ASST TO DIR	5	WHT	10/16
HISTORIAN			
CH/PPBS			
DEP CH/PPBS			
EXO/PPBS			
CH/SS			
DEP CH/SS			
SC & P			
RECORDS MGT			
PERSONNEL			
LOGISTICS			
TRAINING			
SECURITY			
FINANCE			
CH/IEG			
DEP CH/IEG			
EXO/IEG			
CH/PSG			
DEP CH PSG			
EXO PSG			
CH/TSG			
DEP CH/TSG			
EXO/TSG			
DIR/IAS/DDI			
CH/DIAXX-4			
CH/DIAAP-9			
CH/SPAD			

REMARKS

FYI

Attached is a copy of the "B" Camera configuration data made available to

[redacted] 25X1

Copy sent to

[redacted] 25X1

IP FORM 30 (7 70) OBSOLETE PREVIOUS EDITIONS

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