PHOTOGRAPHIC EQUIPMENT

Figure C-1. General View of F4U-5P Airplane

C-1. PHOTOGRAPHIC EQUIPMENT—GENERAL.

C-2. DESCRIPTION. The F4U-5P airplane is a photographic reconnaissance version of the F4U-5. It is basically the same airplane, the main difference being the incorporation of provisions for remote camera control, the installation of accommodations for either the "K" series cameras or the S-7S continuous strip camera, and the relocation of the remote indicating compass transmitter in the fin. Access to the camera compartment is obtained through the radio access door. The camera compartment and related equipment are designed to accommodate either the "K" series aerial cameras or the S-7S continuous strip camera. Conversion from one type camera to the other is provided for by the inclusion of a camera conversion kit in the camera compartment. All F4U-5P airplanes are equipped with one vertical and two oblique sliding camera doors, an oil deflector for each of the doors, a camera door actuating system, and a master camera switch.

The installation of the "K" series cameras is provided for by an adapter for mounting the camera, an electrical actuating motor for rotating the camera adapter, a solenoid actuated sway brace, four adjustable sway brace assemblies to secure the lens cones to the camera in position, a vacuum system to hold the film flat in the magazine, and the installation of an intervalometer in the cockpit. The S-7S continuous strip camera installation is provided for by installing a scanner unit in the lower fuselage at station 150, the installation of the strip camera remote control unit in the cockpit, an amplifier mounted at station 223 and a photo recorder mounted at station 253.

For detailed information on the photographic equipment, refer to paragraphs C-3 through C-17 for the "K" series installation, and to paragraphs C-18 through C-30 for the S-7S continuous strip camera installation.

Note

The effect of this modification on speed and other performance items is negligible.

C-3. INSTRUMENT PANEL. *(See figure C-4.)* The instrument panel in the F4U-5P airplane is the same as in the F4U-5 airplane except as follows: The climb indicator is above the elapsed time clock and the Mark 1 rocket selector switch is relocated below the stand-by compass. The P-3 compass correction card is located on the left side below the airspeed correction card. A B-3B intervalometer or remote control panel is installed above the climb indicator at the top of the instrument panel.

C-4. "K" SERIES CAMERA INSTALLATION.

C-5. "K" SERIES INTERVALOMETER. A B-3B type intervalometer is located on the instrument board above the climb indicator. The intervalometer is a 24 volt direct current electrical timing unit which automatically trips the camera shutter at pre-determined intervals. The controls for the intervalometer (see figure C-3) consist of the power supply toggle switch, setting knob, recycle knob and an "extra-picture" switch. A dial on the intervalometer is graduated in seconds for direct indication of the interval between film exposures. The setting hand can be rotated to any position between 2 and 120 seconds on the dial by depressing and turning the setting knob marked "INTERVAL," thereby indicating the selected time interval on the dial scale. The setting hand remains where set by the knob. The interval hand, indicating the remaining time portion of the set interval, returns to zero in one-second increments. Upon reaching the zero position it automatically snaps back to its original set position and starts again to return to zero. The camera is tripped the moment this interval hand reaches zero on the dial. The required time interval may be determined

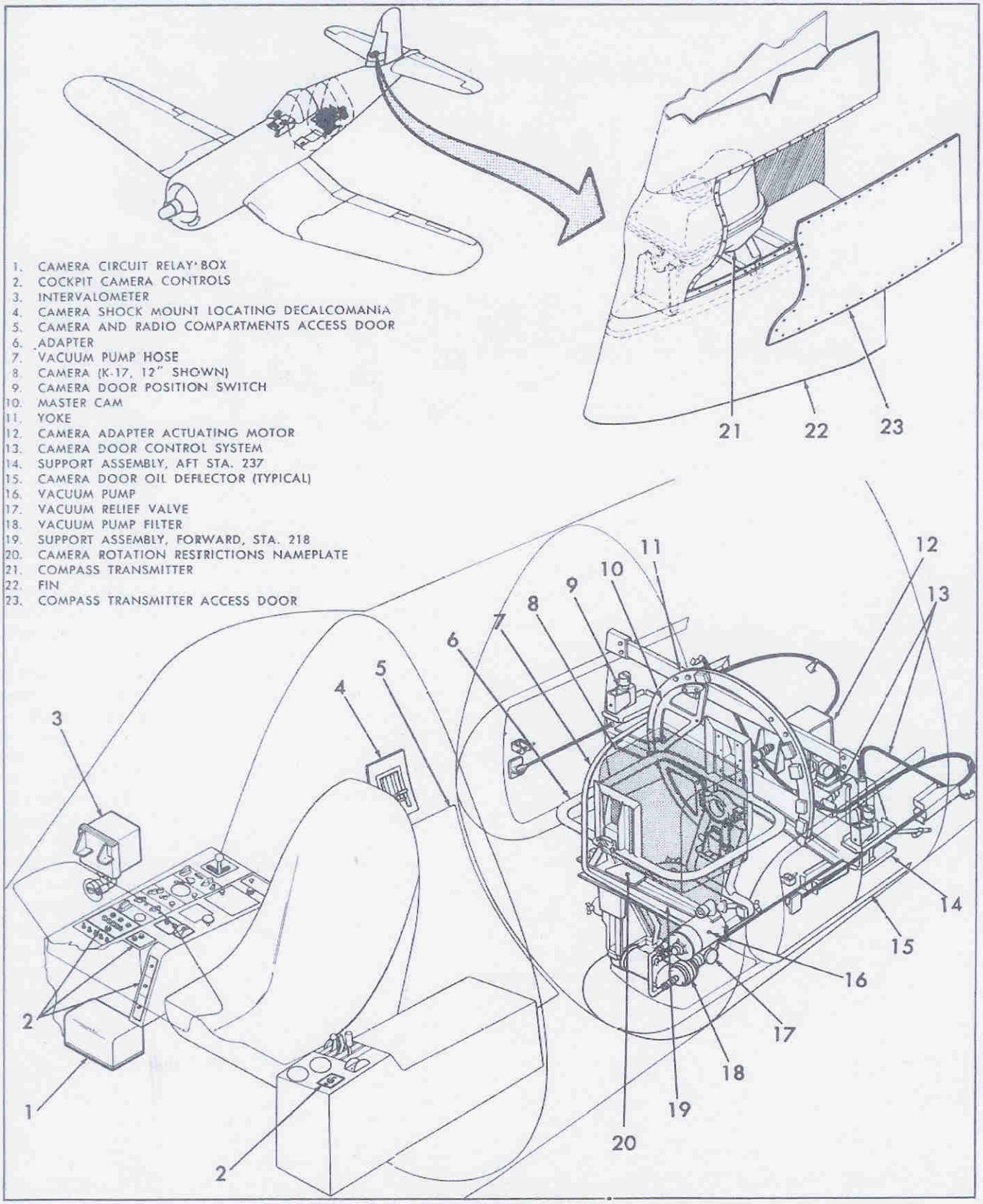


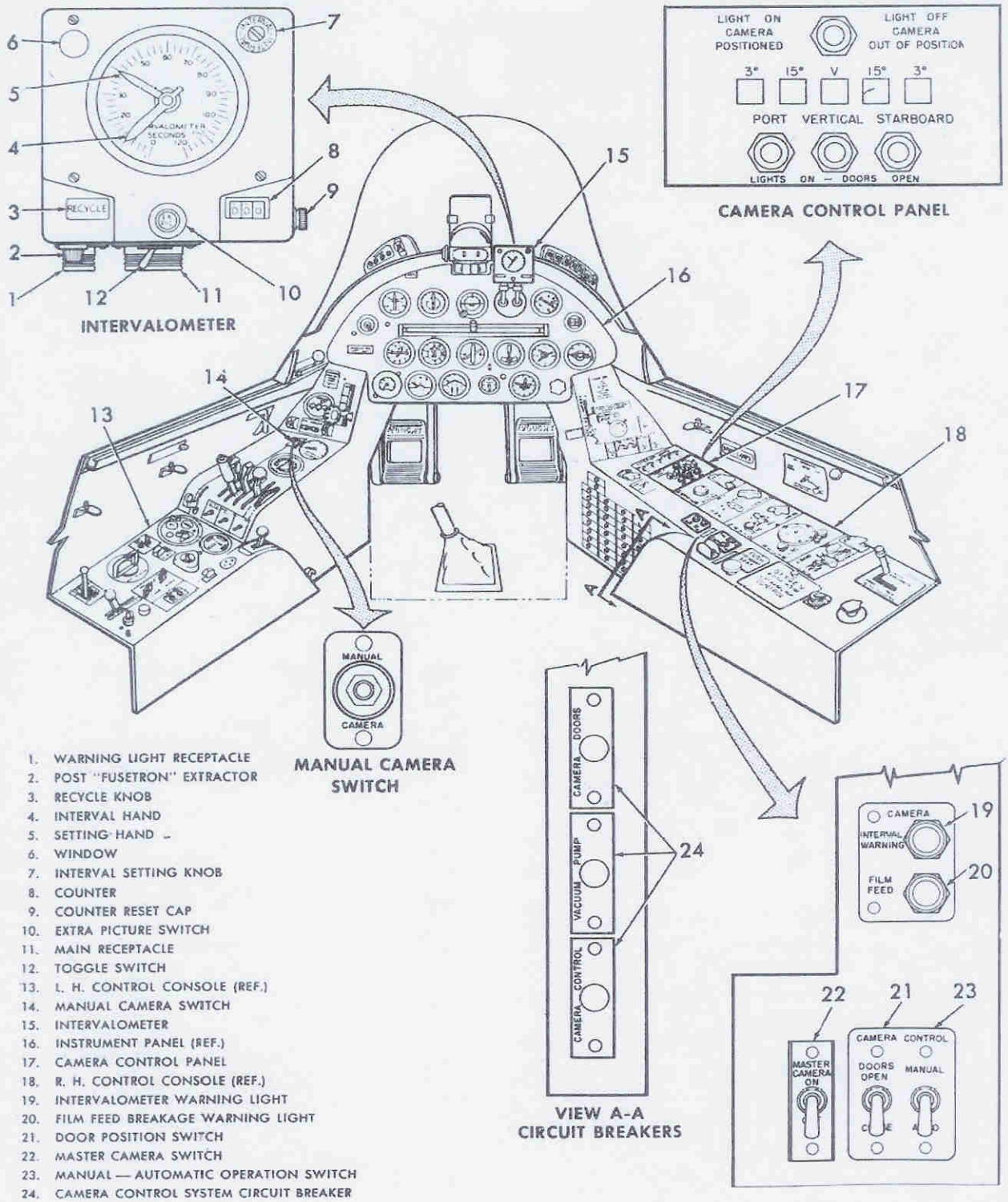
Figure C-2. Photographic Equipment

from altitude-speed charts (see figures C-8 through C-13). The interval selection is dependent upon altitude, airplane speed, focal length of the camera, and the percentage of overlap desired. The counter should be reset by depressing the reset cap and turning it clockwise. Upon reaching the area to be photographed, set the setting hand by depressing and turning the setting knob. Clockwise rotation of the knob decreases the interval time, and counter-clockwise rotation increases the interval time. To operate the intervalometer, snap the toggle switch to the "ON" position. If the intervalometer is already in operation and it is desired any instant to begin a new series of exposures, the recycle knob must be depressed. An exposure is then made immediately, and the complete cycle is started again with the set interval starting before the next exposure. If, at any time before the intervalometer starts automatic operation or during the operation of the instrument, an extra picture is desired, the operator depresses the extra-picture switch button. Pressing this button between automatically timed exposures will not alter the timing as shown on the dial. If the air speed, altitude, or any other variable entering into the determination of the proper interval changes, the time interval must be rechecked and the intervalometer reset if necessary.

C–6. "K" SERIES CAMERA CONTROL PANELS. *(See figure C-3.)* Two of the three camera control panels are located on the right hand control panel in the cockpit. One is located forward of the master switch and VHF panel and carries the five switches necessary for rotating the camera. The five switches, one for each of the five camera positions (three and fifteen degrees down from the horizontal on both the right and left sides and the vertical), are depressed to move the camera to the position desired. Forward of these switches is the green camera position light, which is lighted when the camera is in position and not lighted during the time the camera is in transit. Included in this panel are three amber camera door position lights which are lighted when the camera doors are fully open. Forward of the oxygen bottle and seat adjustment control is a panel containing the master camera switch, the door control switch, the manual and automatic camera operation switch, the amber intervalometer warning light and the red film breakage warning light. Circuit breakers for the camera control, vacuum pump and camera door circuits are located on the nose (see figure C-3, View A-A) of the console. The third camera control panel is located on the left hand control panel in the cockpit and contains the manual picture switch.

C–7. "K" SERIES MANUAL-AUTOMATIC SWITCH. *(See figure C-3.)* With the camera control switch, located on the right hand control panel, in the "AUTOMATIC" position, all pictures will be taken in accordance with the setting of the intervalometer, with no further attention required on the part of the pilot other than that of maintaining attitude and altitude conditions previously determined. If it is desired to take individual pictures the camera control switch should be placed in the "MANUAL" position; and the manual control pushbutton, located on the left hand control panel forward of the master water injection switch, depressed for each picture desired.

C–8. "K" SERIES OPERATION. *(See figure C-5)* When the master camera switch, located on the camera control panel on the right hand control panel is moved to the "ON" position, power from the airplane's electrical system is directed to the camera electrical operating system. Operation of the camera system is as follows: With the master camera switch in the "ON" position, power flows from the plus bus of the airplane's electrical system to the camera control circuit breaker, to the camera bus, through a capacitor in this circuit to the vacuum pump. In addition, power passes from the plus bus through the camera door circuit breaker to the camera door circuit. The red film feed breakage warning light circuit is closed when film breakage occurs. The amber intervalometer warning light is lighted two seconds before the intervalometer trips the camera during automatic operation. With the camera door position switch in the "OPEN" position, power flows from the camera door circuit breaker through the camera door switch to the camera door actuating motor, and the three camera doors open simultaneously. Movement of the camera door switch to the "CLOSED" position allows power to flow to the other side of the door circuit and the doors close. When the doors are fully opened they close microswitches, which are actuated by contact bolts on the doors, and allow power to flow from the camera bus to the door microswitches and then forward to three amber, door position lights located in the cockpit. When the three degree left position switch is depressed, power will flow from the camera bus through the camera control panel, aft to camera position microswitch No. 11, located on the yoke, and then to the relay in the camera adapter actuator control box. Power through this switch also energizes the normally closed green camera position indicator light circuit. This turns the light off during the time the camera is in transit. At the same time, the relay in the camera adapter actuator control box directs power to the sway brace solenoid, retracting the solenoid from its extended position. The solenoid in retracting closes a switch, located on a bracket above the solenoid, and in doing so, causes power flow to the camera adapter actuating motor which then rotates the adapter and the camera into the selected position. When the camera has reached this position, the aluminum master cam secured to the adapter opens camera position switch No. 1 and rotation ceases. Power to the relay in the camera control panel in the cockpit stops and the camera position indicating light goes on. Power is also cut off from the camera adapter actuator relay, de-energizing the actuator motor and the solenoid sway brace. The solenoid sway brace then extends and meshes with the serrated mating pad on the fuselage structure, locking the camera in position. With the doors fully opened, power flows from the plus



1. WARNING LIGHT RECEPTACLE
2. POST "FUSETRON" EXTRACTOR
3. RECYCLE KNOB
4. INTERVAL HAND
5. SETTING HAND
6. WINDOW
7. INTERVAL SETTING KNOB
8. COUNTER
9. COUNTER RESET CAP
10. EXTRA PICTURE SWITCH
11. MAIN RECEPTACLE
12. TOGGLE SWITCH
13. L. H. CONTROL CONSOLE (REF.)
14. MANUAL CAMERA SWITCH
15. INTERVALOMETER
16. INSTRUMENT PANEL (REF.)
17. CAMERA CONTROL PANEL
18. R. H. CONTROL CONSOLE (REF.)
19. INTERVALOMETER WARNING LIGHT
20. FILM FEED BREAKAGE WARNING LIGHT
21. DOOR POSITION SWITCH
22. MASTER CAMERA SWITCH
23. MANUAL — AUTOMATIC OPERATION SWITCH
24. CAMERA CONTROL SYSTEM CIRCUIT BREAKER

Figure C-3. Camera Cockpit Controls

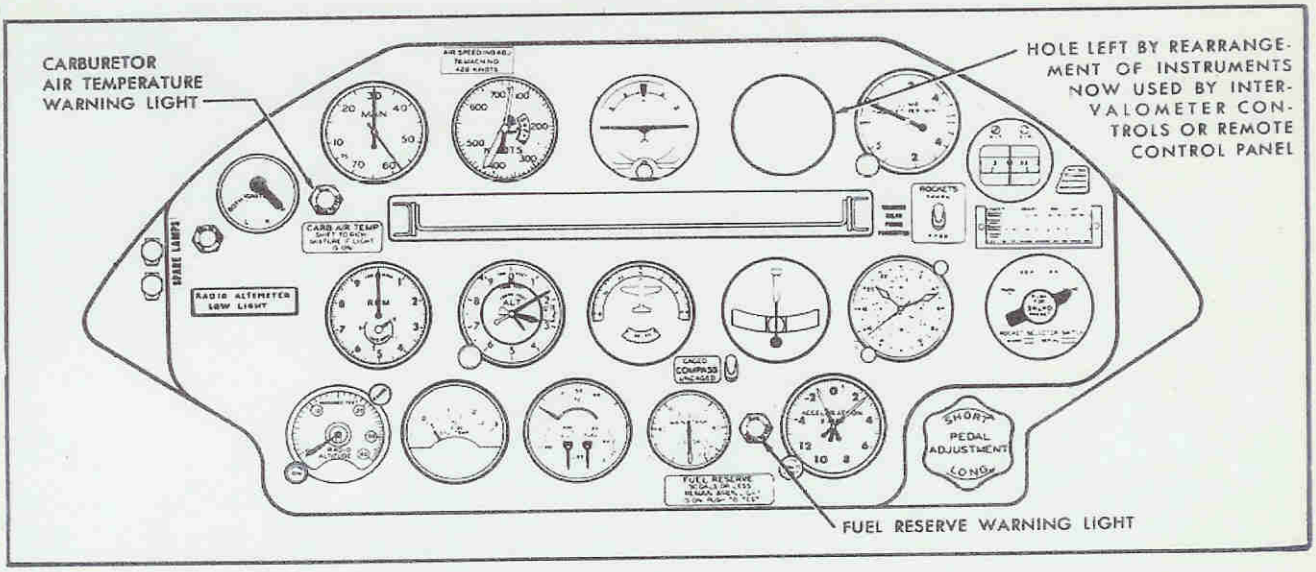


Figure C-4. F4U-5P Instrument Board

tion microswitches (No. 9-vertical, No. 10-right, and No. 11-left) completing the circuit to the camera and permitting camera operation. In the three degree left position, No. 11 switch is actuated by a phenolic cam, located on the master cam, allowing power to flow to the relay in the cockpit relay box and then to the camera, which is now ready to take pictures manually or automatically. Operation of the system when other camera positions are selected is the same with the exception that other position microswitches are brought into action.

Note

This type control system prevents camera operation and film waste when the camera doors are not open.

C-8. PREFLIGHT CHECK OF COMPLETE INSTALLATION.

C-9. PROCEDURE. After the camera and loaded magazine have been installed in the airplane, check the operation of the entire installation as follows:

a. Turn on the master camera switch.

b. Open the vertical and oblique sliding doors.

c. Check the rotation of the camera to all positions.

d. Check the door operation and position indicating lights.

e. Set intervalometer dial at nine seconds or more.

f. Place camera control switch in "AUTOMATIC."

g. Start the intervalometer and check its operation through two exposures.

h. Turn off intervalometer switch.

i. Check manual selection by depressing the manual push button for one exposure.

j. Close camera doors.

k. Turn off the master camera switch until take-off to avoid overheating the camera and intervalometer and to prevent excessive drain on the battery.

Note

It will be necessary for two men to make the above check, one to operate the switches and one to watch the camera.

WARNING

Satisfactory oblique photographs cannot be made from this airplane unless exhaust stack extensions are installed. (See figure C-1.)

C-10. PROCEDURE AT TAKE-OFF.

C-11. PROCEDURE AT TAKE-OFF. Observe the following steps at take-off:

a. Set the intervalometer counter to zero. The counter located on the side of the case should be reset by depressing the reset cap and turning it clockwise.

Note

Before proceeding with the next step, make sure the intervalometer is "OFF" and the camera doors are "CLOSED" to insure that the camera will not operate when the master camera switch is moved to the "ON" position.

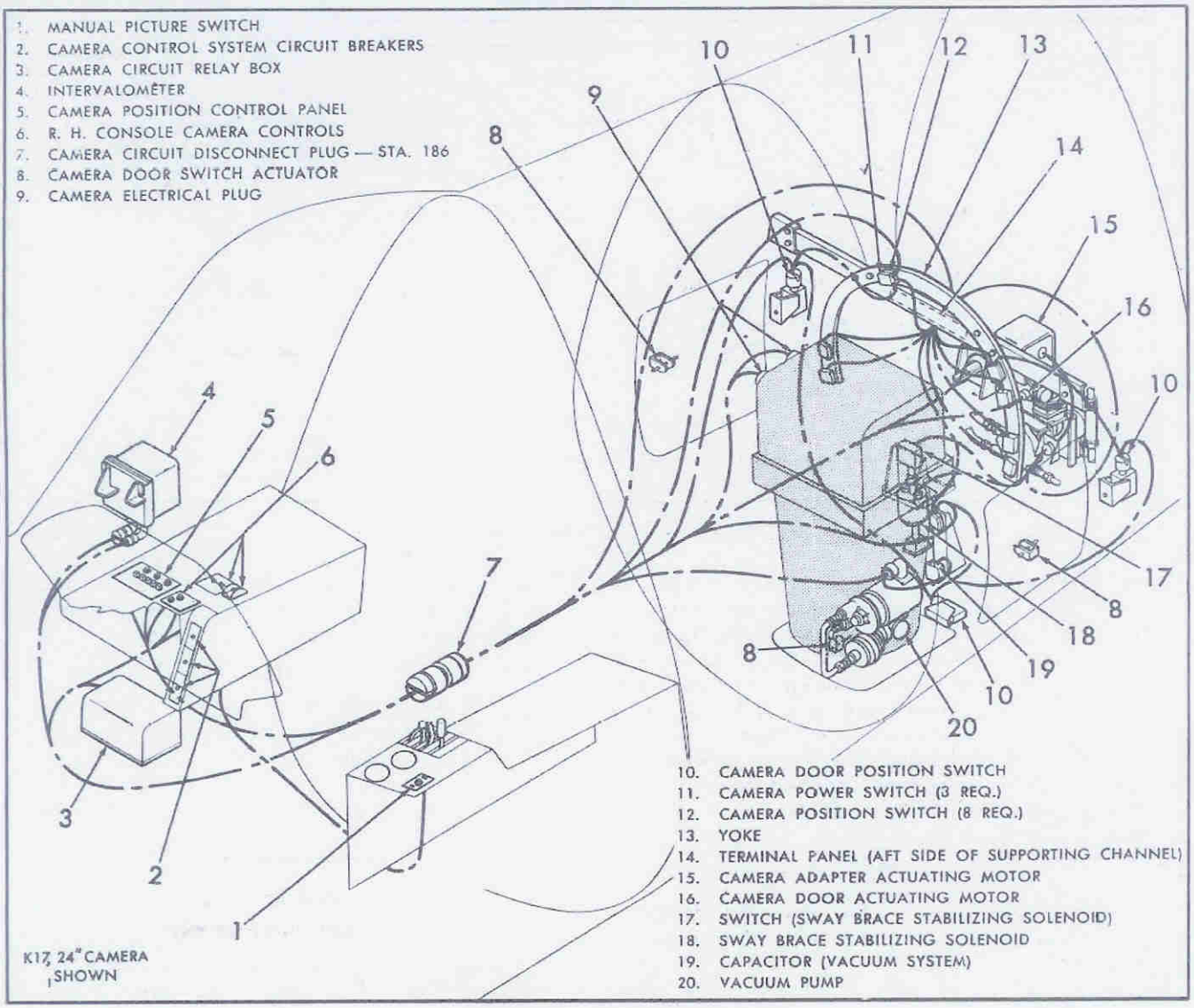


Figure C-5. Camera Electrical System

b. Turn on the master camera switch to start camera magazine heater operation.

C-12. CHECK-OFF LIST PRIOR TO CAMERA OPERATION.

C-13. PROCEDURE. To prepare the camera for operation proceed as follows:

a. Master camera switch "ON."

b. Set interval on intervalometer.

c. Select "MANUAL" or "AUTOMATIC" operation as required.

d. Open camera doors. Note door position lights. Both vertical and oblique door position lights should light to indicate doors full open.

C-14. AT TARGET AREA.

C-15. PROCEDURE. Upon reaching the area to be photographed, proceed as follows:

a. Rotate the camera to the desired position.

b. Set the setting hand on the intervalometer by depressing and turning the setting knob. Clockwise rotation of the knob decreases the interval (increases the rate) at which photographs are taken; counterclockwise rotation increases the interval (decreases the rate) at which photographs are taken. The interval hand, indicating the remaining time portion of the set interval, returns to zero in one second increments. Upon reaching zero it automatically returns to the original set position and starts again to zero. The intervalometer warning lights on the camera control panel and intervalometer will flash two seconds before exposure takes place.

Note

The required time interval may be determined from altitude-speed charts. Interval selection is dependent upon altitude, airplane speed, focal length of camera and percentage of overlap desired (see figures C-8 through C-13).

c. Open camera doors. The camera will not operate unless the doors are open.

d. Move camera control switch to desired position, "MANUAL" or "AUTOMATIC." When on "AUTOMATIC" camera will take pictures as regulated by intervalometer setting.

e. Move intervalometer toggle switch to "ON" position.

f. If intervalometer is already in operation and it is desired at any instant to start a new series of exposures, depress recycle knob. An exposure is then made immediately, and the complete cycle started again with the set interval occurring before the next exposure.

g. If, at any time before the intervalometer starts automatic operation or during the operation, an extra picture is desired, depress the extra picture switch button. Pressing this button between automatically-timed exposures will not alter the timing as shown on the dial.

Note

If the air speed, altitude, or any other variables entering into the determination of the proper interval changes, the time interval must be rechecked and the intervalometer reset if necessary.

h. To take selective pictures, move camera control switch to "MANUAL." This cuts out the automatic feature of camera system, allowing individual pictures to be taken as desired by pressing manual control switch, located on left-hand control panel.

C-17. AT COMPLETION OF PHOTOGRAPHY—"K" SERIES CAMERA.

C-18. PROCEDURE. After completion of photography, turn off intervalometer and close vertical and oblique camera doors, leaving master camera switch in the "ON" position should the equipment be required for immediate use. Turn master camera switch off before landing.

TYPE	K-17		K-18
FOCAL LENGTH	12"	24"	24"
LENS CONE ANGLE	41°	30°	42°
SHUTTER SPEEDS	1/75 1/150 1/225	1/50 1/100 1/150	1/50 1/100 1/150
DIAPHRAGM STOPS (F VALUE)	5 6.3 8 11 16 22	6 8 11 16	6 8 11 16
CYCLE OF OPERATION	3 SECONDS		5 SECONDS
TYPE MAGAZINE	A5-A	A-9	A7 OR A8
IMAGE AREA	9" x 9"		9" x 18"
FILM CAPACITY	75' - 90 EXPOSURES 150' - 180 EXPOSURES 200' - 250 EXPOSURES	390' - 485 EXPOSURES	A-7 75' - 45 EXPOSURES A-8 390' - 250 EXPOSURES
VACUUM SOURCE	OUTSIDE		OUTSIDE
CAMERA WT. LOADED	54.5 LBS.	72.0 LBS.	72.0 LBS.
CAMERA HEIGHT	22 1/2"	25 5/8"	36 7/8"
CAMERA WIDTH	16 1/2"	16 1/2"	21 5/8"
CAMERA LENGTH	14"	15"	13"

Figure C-6. Information on K-17 and K-18 Cameras

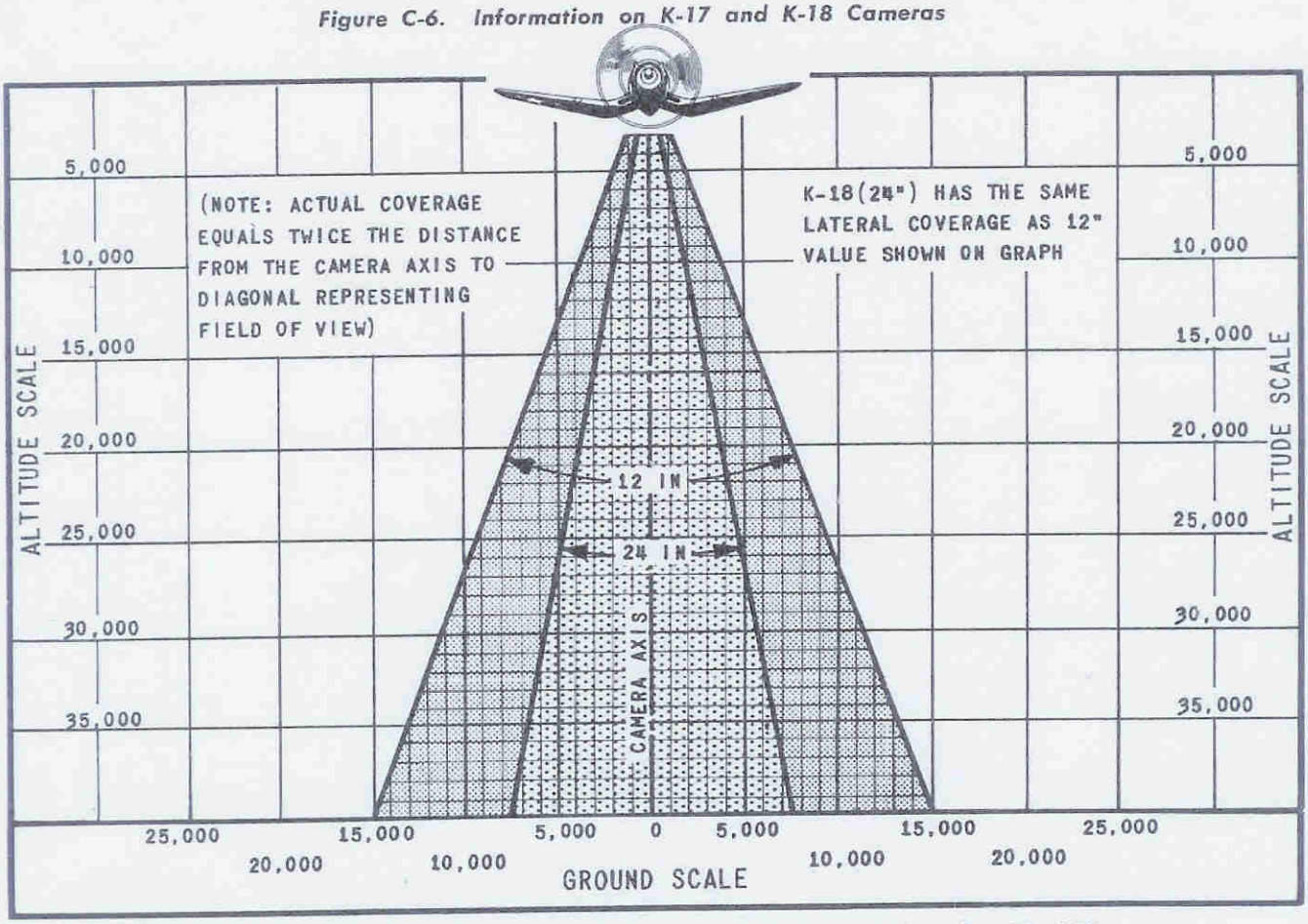


Figure C-7. Camera Coverage In Feet, K-17, 12", K-17, 24" And K-18, 24"

ALTITUDE FEET	KNOTS GROUND SPEED										
12" FOCAL LENGTH	200	220	240	260	280	300	320	340	360	380	400
1,000	CAMERA WILL NOT OPERATE FASTER THAN 3 SECOND CYCLE. 60% OVERLAP WILL NOT BE OBTAINED BELOW THESE ALTITUDES.										
2,000											
3,000											
4,000	3	3									
5,000	4	4	3	3							
6,000	5	4	4	4	3	3	3				
7,000	6	5	5	4	4	4	3	3	3	3	
8,000	7	6	5	5	5	4	4	4	3	3	3
9,000	7	7	6	6	5	5	5	4	4	4	4
10,000	8	9	7	6	6	5	5	5	4	4	4
11,000	9	8	8	7	7	6	6	5	5	5	4
12,000	10	9	8	8	7	7	6	6	5	5	5
13,000	11	10	9	8	8	7	7	6	6	6	5
14,000	12	11	10	9	8	8	7	7	6	6	6
15,000	13	12	11	10	9	8	8	7	7	7	6
16,000	14	12	11	10	10	9	8	8	7	7	7
17,000	15	13	12	11	10	10	9	8	8	7	7
18,000	16	14	13	12	11	10	9	9	8	8	7
19,000	16	15	13	12	12	11	10	9	9	8	8
20,000	17	16	14	13	12	11	11	10	9	9	8
25,000	22	20	18	16	15	14	13	12	12	11	11
30,000	26	24	22	20	18	17	16	15	14	13	13
35,000	30	28	25	23	22	20	19	18	17	16	15
40,000	35	32	29	27	25	23	22	20	19	18	17

THESE SETTINGS ARE IN SECONDS FOR 60% OVERLAP

Figure C-8. Intervalometer Settings, K-17, 12" Camera

ALTITUDE IN FEET	KNOTS GROUND SPEED						
	220	240	260	280	300	320	340
100	0.8	0.7	0.7	0.6	0.6	0.5	0.5
200	1.6	1.4	1.3	1.2	1.1	1.1	1.0
300	2.3	2.1	2.0	1.8	1.7	1.6	1.5
400	3.1	2.9	2.6	2.5	2.3	2.2	2.0
500	3.9	3.6	3.3	3.1	2.9	2.7	2.5

——— MINIMUM ALTITUDES TO STOP MOTION AT MAXIMUM SHUTTER SPEED.
- - - - - MINIMUM ALTITUDE FOR 60% OVERLAP WITH SHORTEST INTERVAL AVAILABLE (3 SECONDS).

Figure C-9. Intervalometer Setting In Seconds, K-17, 24" Camera, 3° Oblique

ALTITUDE FEET	KNOTS GROUND SPEED											
	200	220	240	260	280	300	320	340	360	380	400
1000	K-17 CAMERA WILL NOT OPERATE FASTER THAN 3 SECOND CYCLE. K-18 CAMERA WILL NOT OPERATE FASTER THAN 5 SECOND CYCLE. 60% OVERLAP WILL NOT BE OBTAINED BELOW THESE ALTITUDES.										
2000											
3000											
4000											
5000											
6000											
7000	3										
8000	3	3									
9000	4	3	3	3							
10000	4	4	3	3	3						
11000	4	4	4	3	3	3	3				
12000	5	4	4	4	3	3	3	3			
13000	5	5	4	4	4	3	3	3	3	3	
14000	6	5	5	4	4	4	3	3	3	3	3
15000	6	6	5	5	4	4	4	3	3	3	3
16000	7	6	5	5	5	4	4	4	3	3	3
17000	7	6	6	6	5	5	4	4	4	4	3
18000	8	7	6	6	5	5	5	4	4	4	4
19000	8	7	7	6	6	5	5	4	4	4	4
20000	8	8	7	6	6	5	5	5	4	4	4
25000	11	10	9	8	7	7	6	6	6	5	5
30000	13	12	11	10	9	8	8	7	7	7	6
35000	15	14	12	11	11	10	9	9	8	8	7
40000	17	16	14	13	12	11	11	10	9	9	8

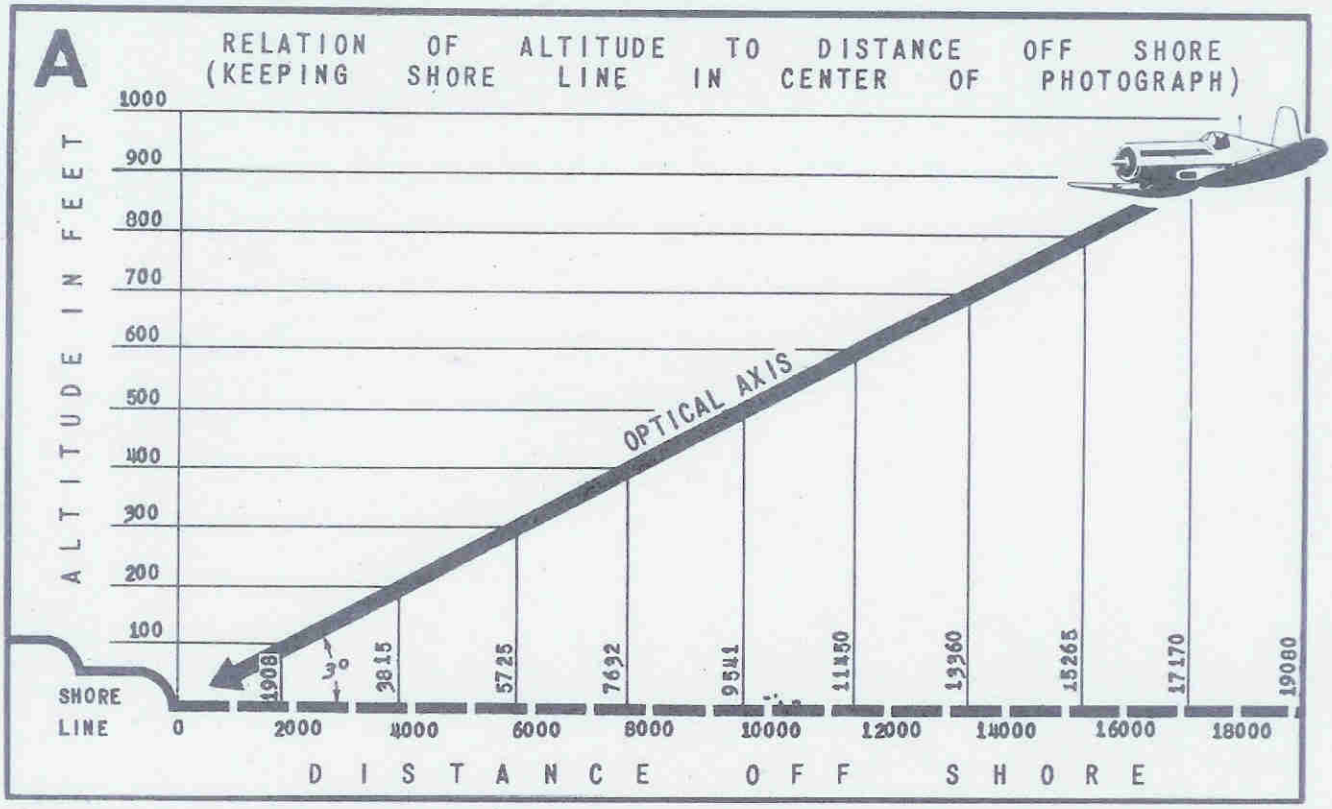
24" FOCAL LENGTH

THESE SETTINGS ARE IN SECONDS FOR 60% OVERLAP

Figure C-10. Intervalometer Settings, K-17 And K-18, 24" Cameras

MINIMUM ALTITUDE PERMITTED TO OBTAIN 60% FORWARD OVERLAP AT MAXIMUM OPERATING SPEED OF CAMERA																
GROUND SPEED KNOTS	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350
K-18, 24" 5 SEC. CYCLE	11300	11900	12450	13050	13600	14150	14750	15300	15850	16450	17000	17550	18150	18700	19250	19830
K-17, 24" 3 SEC. CYCLE	6800	7140	7480	7820	8160	8500	8840	9180	9520	9860	10200	10540	10880	11220	11560	11900
K-17, 12" 3 SEC. CYCLE	3400	3570	3740	3910	4080	4250	4420	4590	4760	4930	5100	5270	5440	5610	5780	5950
MINIMUM ALTITUDE PERMITTED TO STOP MOTION AT MAXIMUM SHUTTER SPEED OF CAMERA																
GROUND SPEED KNOTS	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350
K-18, 24" LENS 1/150 SEC.	5390	5660	5930	6200	6470	6740	7010	7280	7550	7820	8090	8360	8630	8900	9170	9440
K-17, 24" LENS 1/150 SEC.	5390	5660	5930	6200	6470	6740	7010	7280	7550	7820	8090	8360	8630	8900	9170	9440
K-17, 12" LENS 1/225 SEC.	1790	1875	1960	2050	2150	2240	2330	2420	2510	2600	2695	2780	2870	2960	3045	3135

Figure C-11. Minimum Altitudes—"K" Series Camera



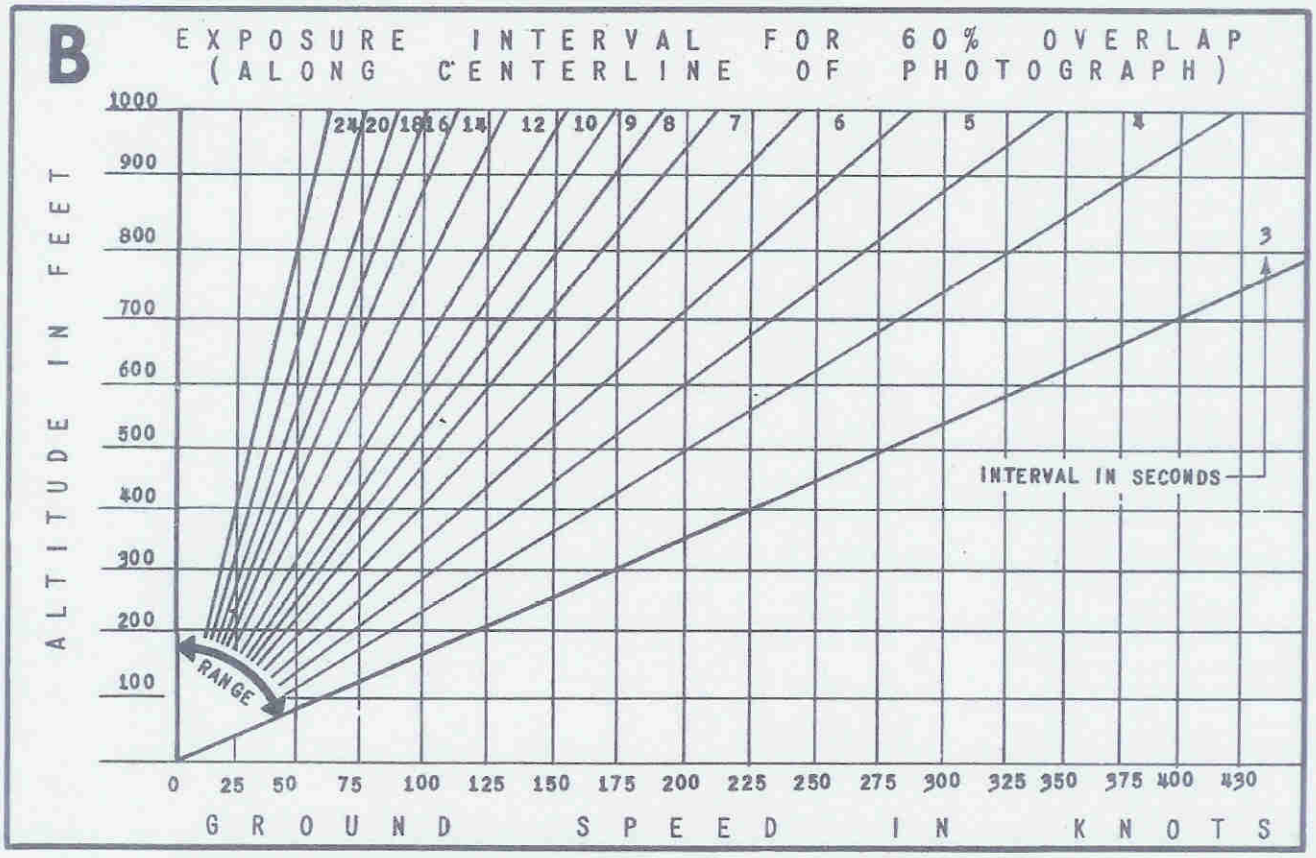
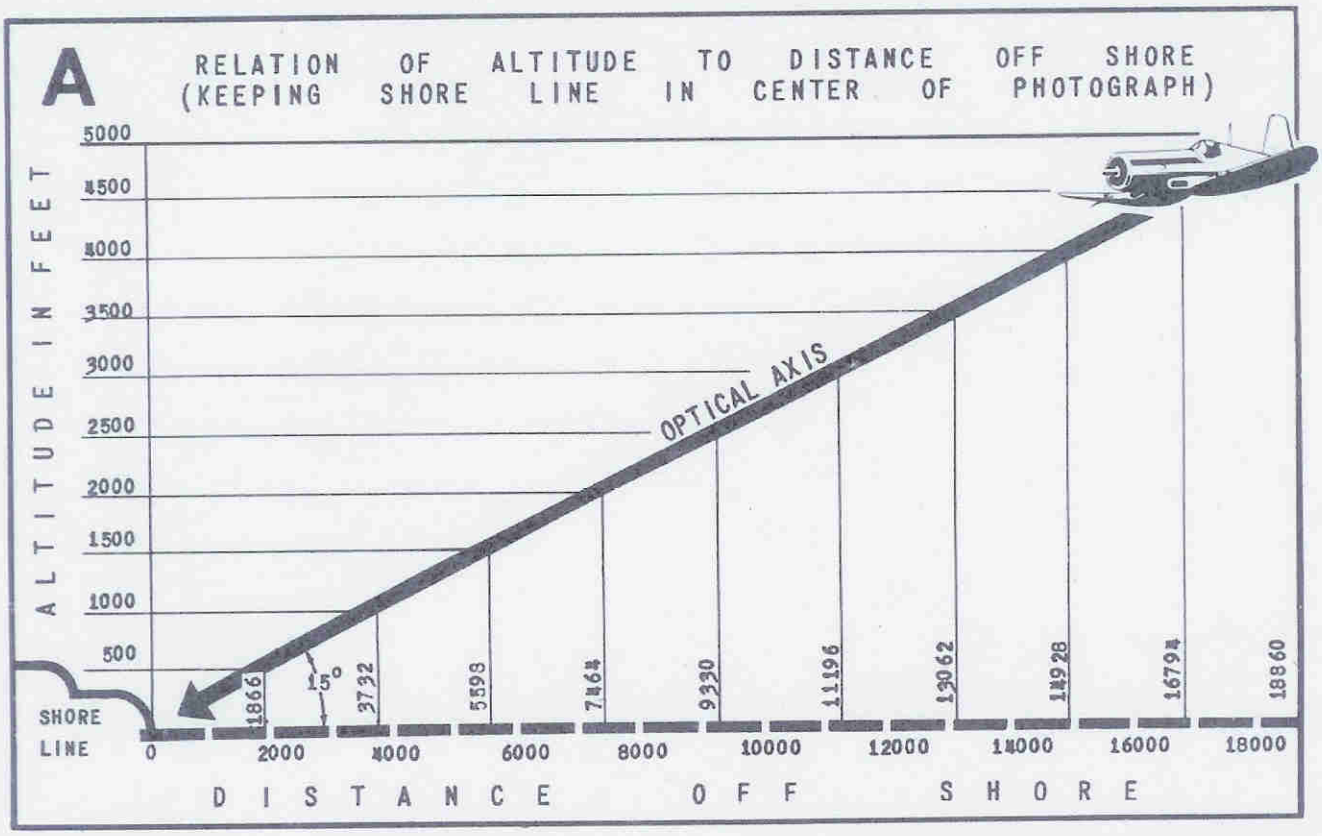


Figure C-12. Oblique K-17, 24" Camera Installation Depressed 3°



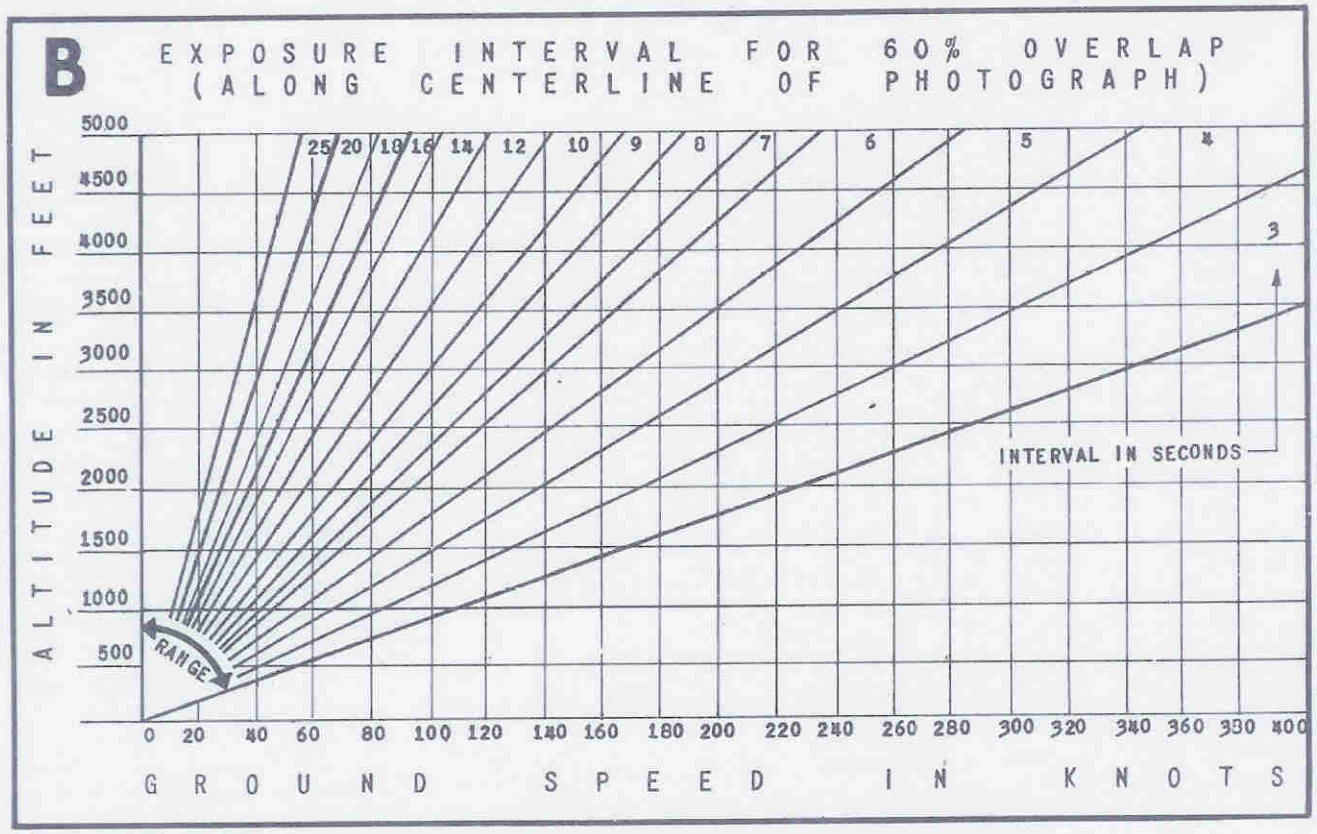


Figure C-13. Oblique K-17, 24" Camera Installation Depressed 15°

C-19. S-7S CONTINUOUS STRIP CAMERA INSTALLATION.

C-20. GENERAL. *(See figure C-14.)* The F4U-5P airplane is equipped to accommodate either the "K" series aerial cameras or the S-7S continuous strip camera. Provisions for camera installation are such that conversion from one camera installation to another can be readily accomplished in the field. Refer to paragraph C-2 for a more detailed description of these provisions. For information on the "K" series cameras, refer to paragraphs C-6 through C-18.

C-21. S-7S REMOTE CONTROL ASSEMBLY. *(See figure C-15.)* The S-7S continuous strip camera installation in the F4U-5P is controlled by means of a remote control assembly. This unit consists of a film speed indicator, a film footage indicator, a film speed light, two synchronizing lights, a camera switch, a servo power switch, an amplifier power switch, and a switch for manual synchronization of the film and image speeds. The control assembly is located at the upper right-hand side of the instrument panel, replacing the intervalometer installation used on the "K" series camera installation. Ordinarily, film speed is controlled automatically by the servo synchronizer.

Note

When the amplifier switch is placed in the "OFF" position, film speed may be preset to any value comparable to indicated airspeed by operating the spring-loaded "FAST-SLOW" switch. Once a setting is obtained (by holding the switch until the film speed dial indicates the desired setting) the film speed will remain constant until the "FAST-SLOW" switch is again deflected. To obtain the correct film speed setting when controlling the camera manually, it is suggested that the following formula be used: $S = \frac{22FV}{15H}$, where—

S = film speed; inches/second
F = lens focal length; inches
V = indicated airspeed; mph
H = absolute altitude; feet.

C-22. S-7S CIRCUIT BREAKERS. An S-7S continuous strip camera circuit breaker is located just aft of the master camera switch on the right-hand console. A radio altimeter circuit breaker is located just forward of the master camera switch. (See figure C-15.)

C-23. S-7S OPERATION. When the master camera switch, located on the right-hand control shelf, is closed, power from the plus bus flows to the camera door switch located just outboard of the master camera switch, and to the camera door position indicating lights. When the camera door switch is placed in the "OPEN" position the door actuating mechanism is energized to slide the doors open. When the doors are fully open they close master switches which light the amber door position indicating lights. The camera circuit is controlled by the switches on the remote control unit on the instrument panel. The S-7S camera motor and photo recorder are energized by closing the "CAMERA" switch. The amplifier is energized by closing the "AMPLIFIER" switch. The servo unit is energized by closing the "SERVO" switch. Power for all these switches is drawn from a plus bus and flows through the S-7S continuous strip camera circuit breaker. Electrical leads from the scanner and generator transmit electrical pulses to the amplifier. The amplifier controls the relays, located on the right-hand side of the radio deck, which cause the servo either to increase or to decrease the film speed.

C-24. PREFLIGHT CHECK—S-7S CAMERA.

C-25. PROCEDURE. After the camera has been installed and the magazine loaded, check the operation of the entire installation as follows:

Note

Before operating the S-7S continuous strip camera make sure that the vacuum pump breaker switch has been pulled out.

a. Turn on the master camera switch located on the right-hand console.

b. Open the sliding camera door by moving camera door control switch to "OPEN" position.

c. Check the door operation.

d. Turn motor on and see that feed mechanism is operating properly.

e. Open access in the bottom of the photo recorder and check to see that bulbs are on.

f. After the leader has been run off, stop the motor and set the film footage indicators, one in the cockpit and one in the camera compartment, to indicate the number of feet of unexposed film in the camera.

g. Close camera doors and turn off master camera switch.

Note

It will be necessary for two men to make the above check, one to operate the switches and one to watch the camera.

C-26. CHECK-OFF LIST PRIOR TO CAMERA OPERATION—S-7S CAMERA.

C-27. PROCEDURE. Observe the following steps prior to camera operation:

a. Master camera switch "ON."

b. Amplifier power switch should be turned on at least five minutes prior to turning on camera.

c. Open camera doors, noting door position lights. Door position lights should indicate doors full open.

1. Camera Remote Control Unit
2. Sonne Camera Circuit Breaker
3. Amplifier Electrical Plugs
4. Camera Amplifier
5. Photo Observer Camera
6. Free Air Temp Bulb
7. Flasher and Relay Assembly
8. Photo Observer
9. Photo Observer Electricel Plug
10. Photo Observer Instruments
11. Pitot and Static Lines to Photo Observer
12. Sonne Camera Generator
13. Sonne Camera Servo Unit and Power Switch
14. Sonne Camera
15. Sonne Camera Relay Unit
16. Relay and Junction Box
17. Disconnects at Station 186
18. Scanner

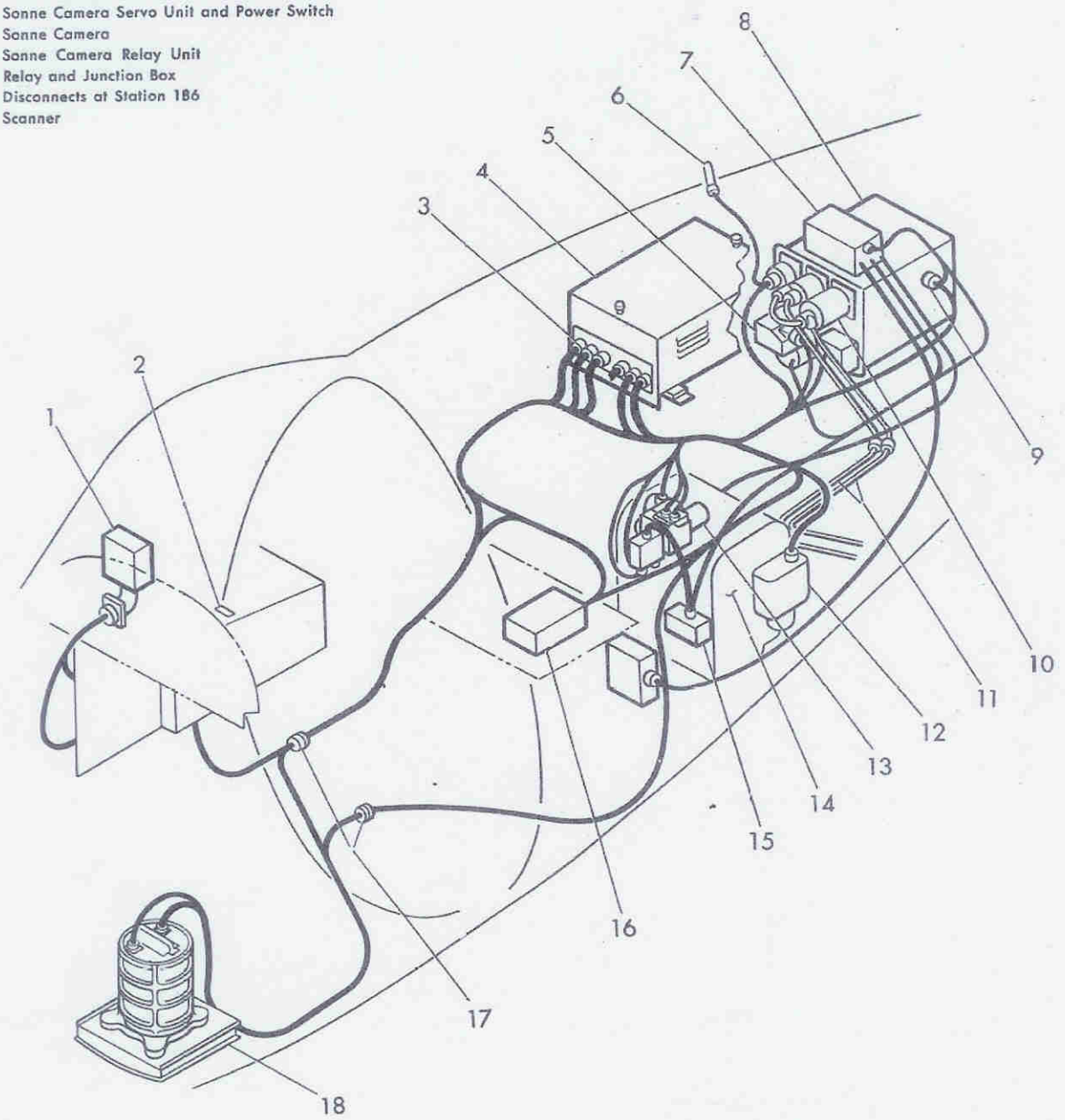


Figure C-14. S-7S Camera Installation Equipment

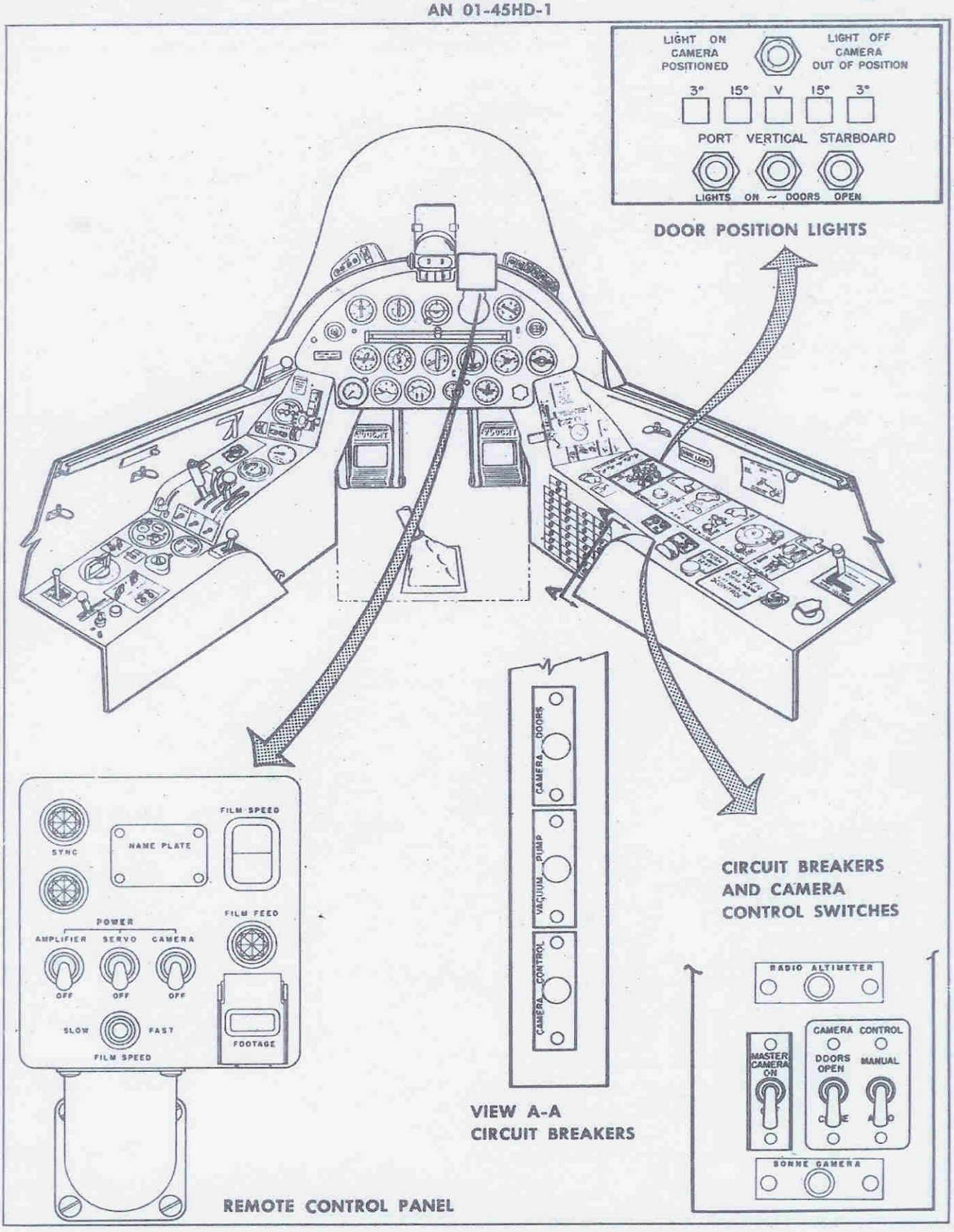


Figure C-15. S-7S Camera Cockpit Controls

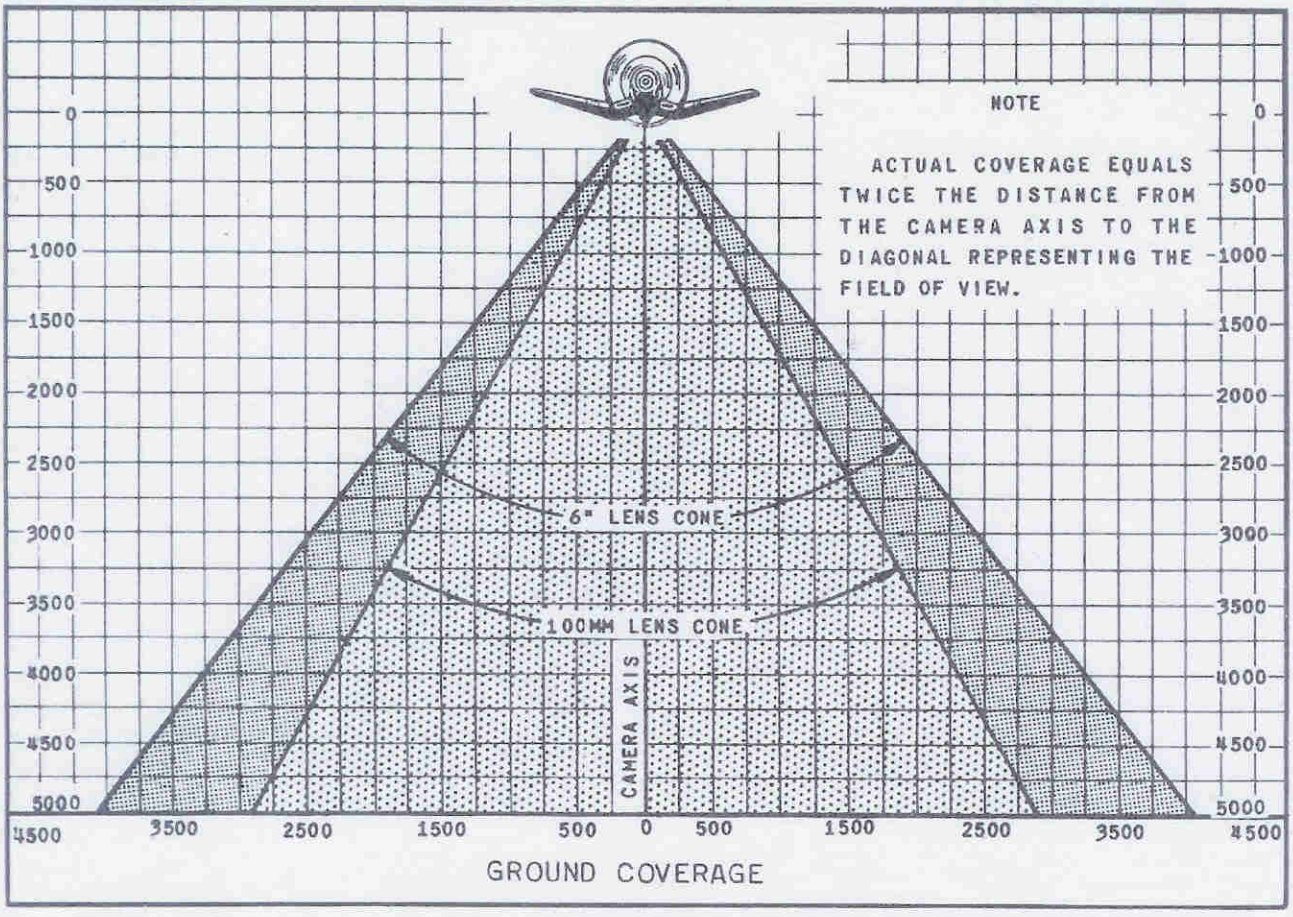


Figure C-16. S-7S Camera Ground Coverage in Feet

CAUTION

Make certain that master camera switch is on and that camera doors are open prior to closing camera switch on remote control unit. The S-7S continuous strip camera can be operated with doors closed. *DO NOT OPERATE CAMERA UNLESS DOOR POSITION LIGHTS INDICATE THAT DOORS ARE OPEN.*

C-28. AT TARGET AREA—S-7S CAMERA.

C-29. PROCEDURE. Upon reaching the area to be photographed, observe the following procedure:

a. Turn camera and servo power switch to "ON." This operation should be performed at least 15 seconds prior to reaching any specific features to be photographed.

b. Make sure that altitude corresponds to camera settings. (This information must be obtained prior to take-off.)

c. Observe indicator lights. The green light indicates that the film speed is below the image speed and is being increased by the servo unit. The red light indicates that the film speed is above the image speed and is being decreased by the servo unit. When the airplane is flying level at a uniform speed, the light should flash continuously from green to red.

d. The film footage counter registers the number of feet of unexposed film remaining. In addition to this instrument, the control unit is also equipped with a green pilot light which remains on as long as film is feeding through the camera and which goes off as soon as the film supply is exhausted or when the camera stops.

C-30. AT COMPLETION OF PHOTOGRAPHY—S-7S CAMERA.

C-31. PROCEDURE. After complete of photography, turn camera switch, servo power switch, and amplifier switch "OFF." Close camera doors and turn master camera switch to "OFF."