



737
NON-DESTRUCTIVE TEST MANUAL

PART 2 - X-RAY

WING LOWER SKIN AND STIFFENER S-7 RUNOUT AT WBL 90

1. Purpose

- A. To detect cracks in the stiffener S-7 runout and wing lower skin at WBL 90. See Figure 1.
- B. This procedure is for surveillance inspection as opposed to an inspection for a specific defect and is considered adequate for detecting large cracks and failed members.

2. Equipment

- A. Baltospot portable 150 KVP, 35-degree side emission X-ray generator was used to develop this procedure.

3. Prepare for the Inspection

- A. Defuel and purge applicable fuel tanks.

ALL

EFFECTIVITY

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X-RAY PARAMETERS						
EXPOSURE NUMBER	FILM			SFD (INCHES)	GENERATOR SETTINGS	
	POSITION	ASTM CLASS	SIZE (INCHES)		KV	MAS
1	1	I	8 x 10	38	120	900

2157407 S0000471055_V1

X-Ray Generator and Film Positioning
Figure 1 (Sheet 1 of 3)

ALL	EFFECTIVITY
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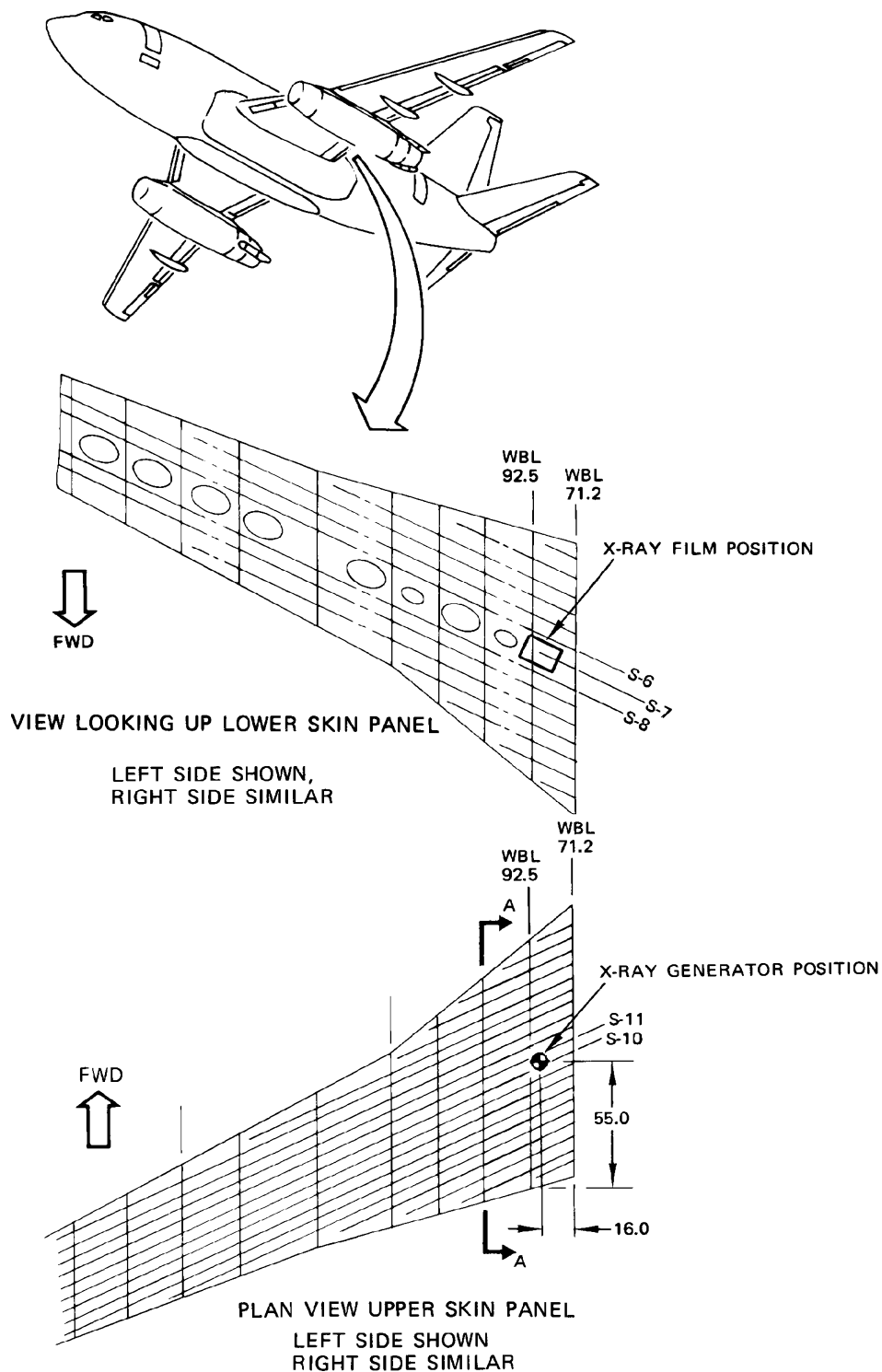
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2157408 S0000471056_V1

X-Ray Generator and Film Positioning
Figure 1 (Sheet 2 of 3)

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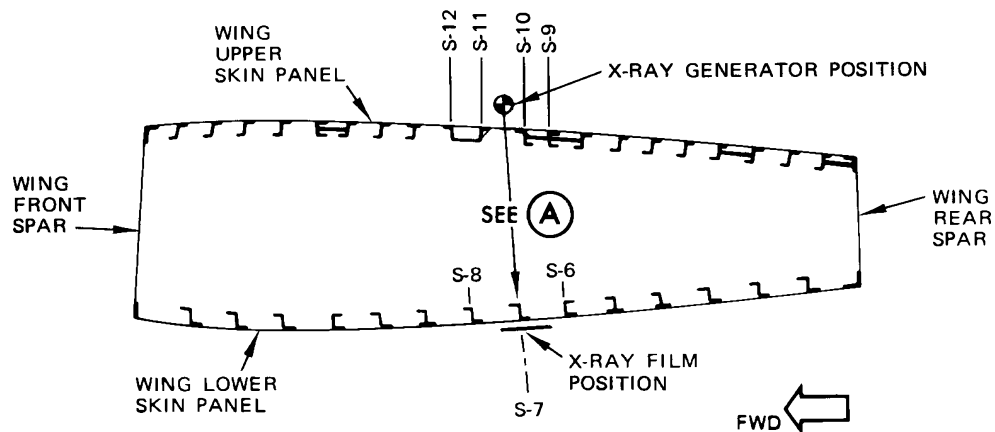
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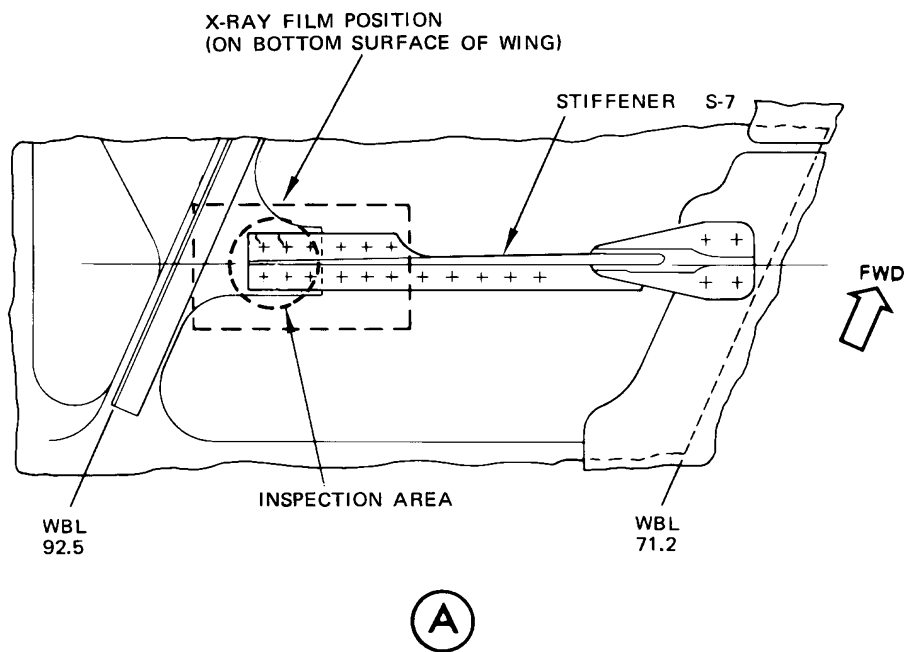
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SECTION A-A



2157409 S0000471057_V1

X-Ray Generator and Film Positioning
Figure 1 (Sheet 3 of 3)

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PART 2 - X-RAY

INBOARD SIDE-WING LOWER SKIN AND STIFFENER S-8C SIDE OF BODY SPLICE, WBL 71.24

1. Purpose

- A. To detect cracks in the wing center section lower skin, stiffener splice plate and splice fitting at the S-8C side of body splice, WBL 71.24. See Figure 1.
- B. This procedure is for surveillance inspection as opposed to an inspection for a specific defect and is considered adequate for detecting large cracks and failed members.
- C. 737 Maintenance Planning Document (D6-17594, D6-38278) Reference:
 - (1) Item: 6-57-19
 - (2) Item: S57-19-A

2. Equipment

- A. Baltospot portable 150 kV, 35-degree side emission X-ray generator was used to develop this procedure.

3. Prepare for the Inspection

- A. Remove lower body-to-wing fairings as required for access to splice area.
- B. Drain and purge applicable fuel tanks.

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X-RAY PARAMETERS						
EXPOSURE NUMBER	FILM				GENERATOR SETTINGS	
	POSITION	ASTM CLASS *[1]	SIZE (INCHES)	SFD (INCHES)	KV	MAS
1	1	I AND II	8 X 10	49	150	1800

NOTE

*[1] CLASS I AND II FILMS ARE LOADED IN SAME CASSETTE.

2157412 S0000471059_V1

X-Ray Generator and Film Positioning
Figure 1 (Sheet 1 of 3)

ALL EFFECTIVITY

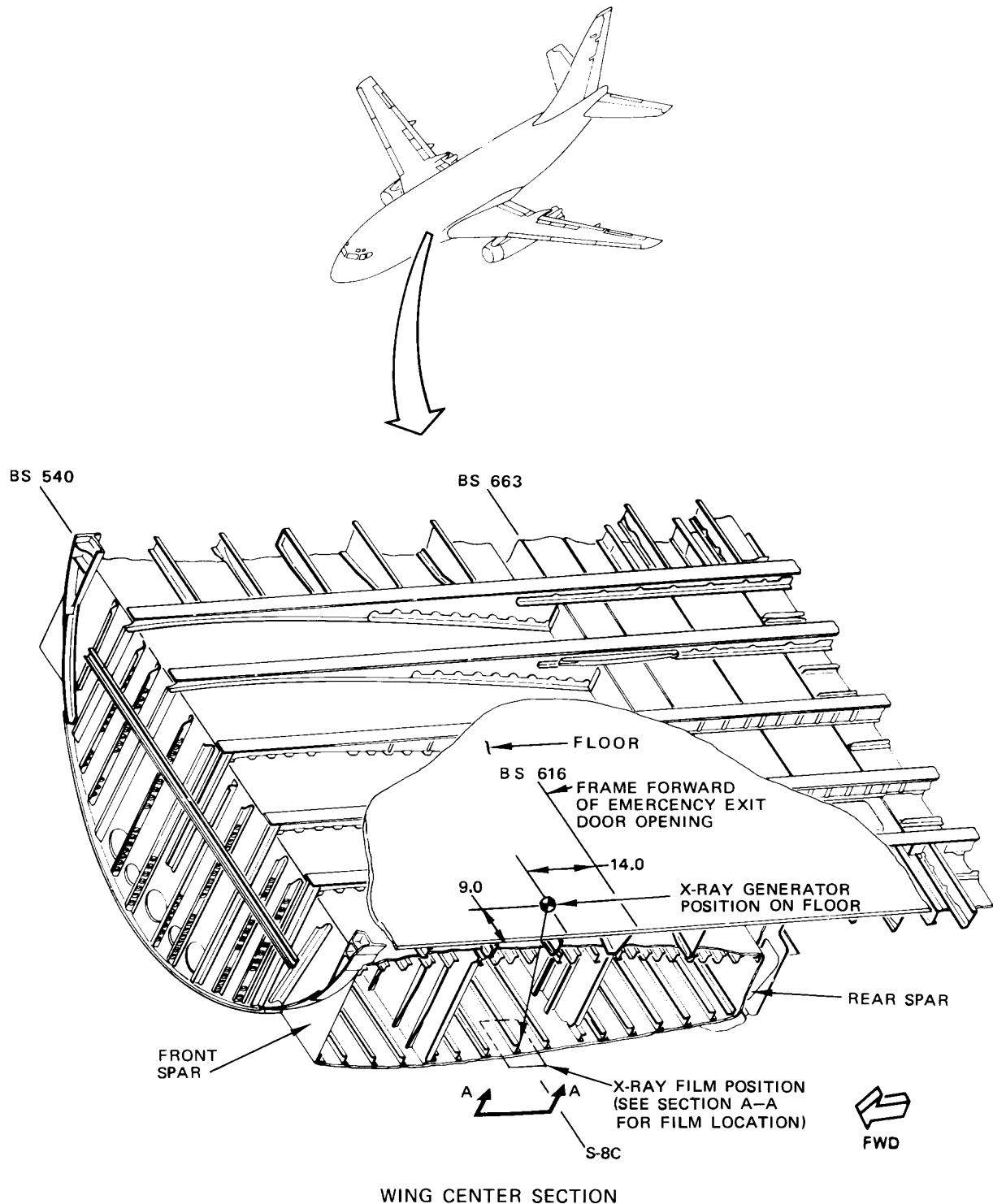
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2157414 S0000471060_V1

X-Ray Generator and Film Positioning
Figure 1 (Sheet 2 of 3)

ALL EFFECTIVITY

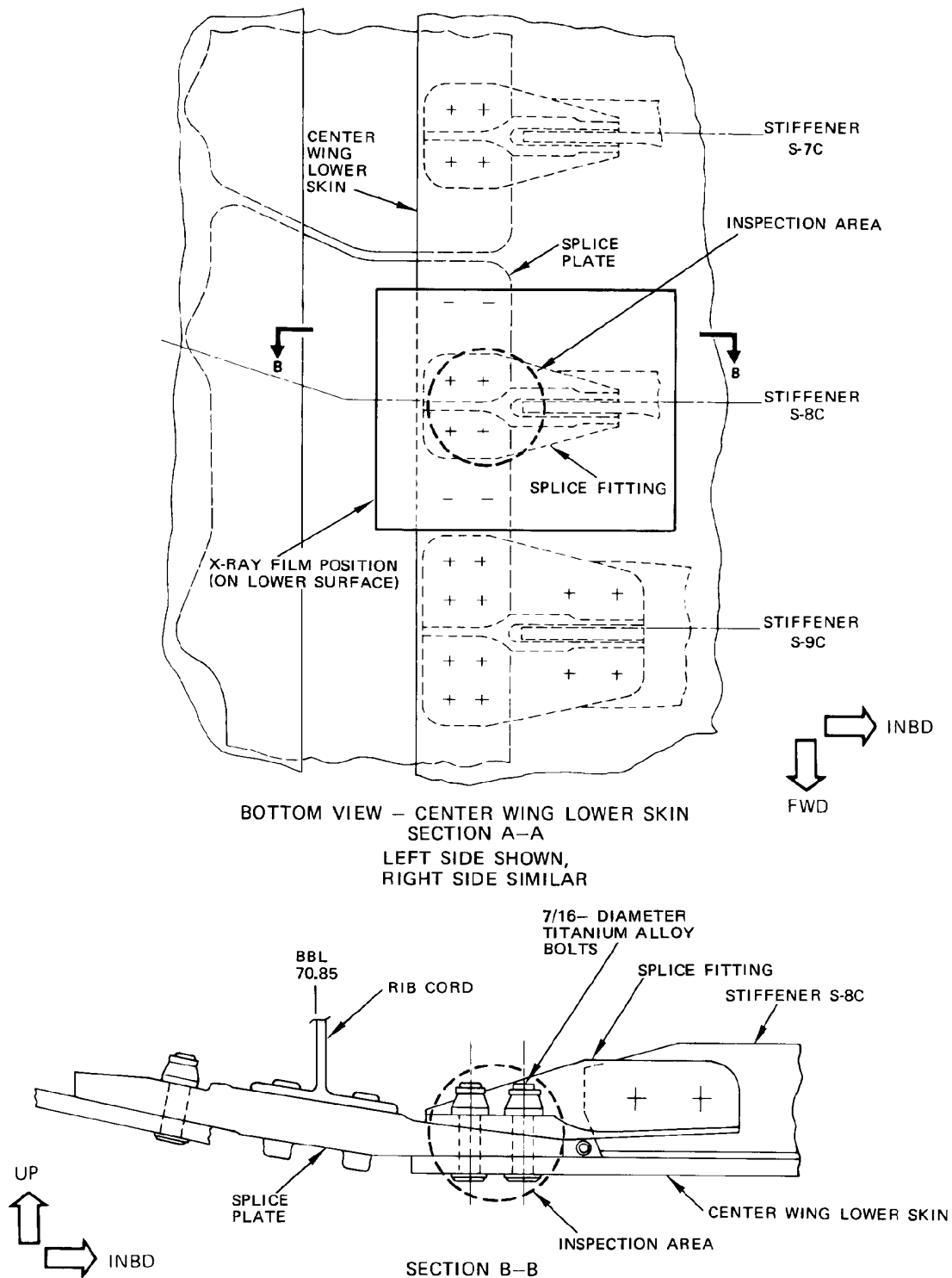
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2157416 S0000471061_V1

**X-Ray Generator and Film Positioning
Figure 1 (Sheet 3 of 3)**

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PART 2 - X-RAY

OUTBOARD SIDE-WING LOWER SKIN AND STIFFENER S-5 SIDE OF BODY SPLICE, WBL 71.24

1. Purpose

- A. To detect cracks in the skin, splice plate and splice fitting at stiffener S-5 side of body splice, WBL 71.24. See Figure 1.
- B. This procedure is for surveillance inspection as opposed to an inspection for a specific defect and is considered adequate for detecting large cracks and failed members.
- C. 737 Maintenance Planning Document (D6-17594) Reference:
 - (1) Item: 6-57-19
 - (2) Item: S57-19-B

2. Equipment

- A. Baltospot portable 150 KVP, 35-degree side emission X-ray generator was used to develop this procedure.

3. Prepare for the Inspection

- A. Remove lower body-to-wing fairings as required for access to splice area.
- B. Defuel and purge applicable fuel tanks.

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X-RAY PARAMETERS						
EXPOSURE NUMBER	FILM			SFD (INCHES)	GENERATOR SETTINGS	
	POSITION	ASTM CLASS	SIZE (INCHES)		KV	MAS MAS
1	1	I	8 x 10	40	150	900

2157417 S0000471063_V1

X-Ray Generator and Film Positioning
Figure 1 (Sheet 1 of 4)

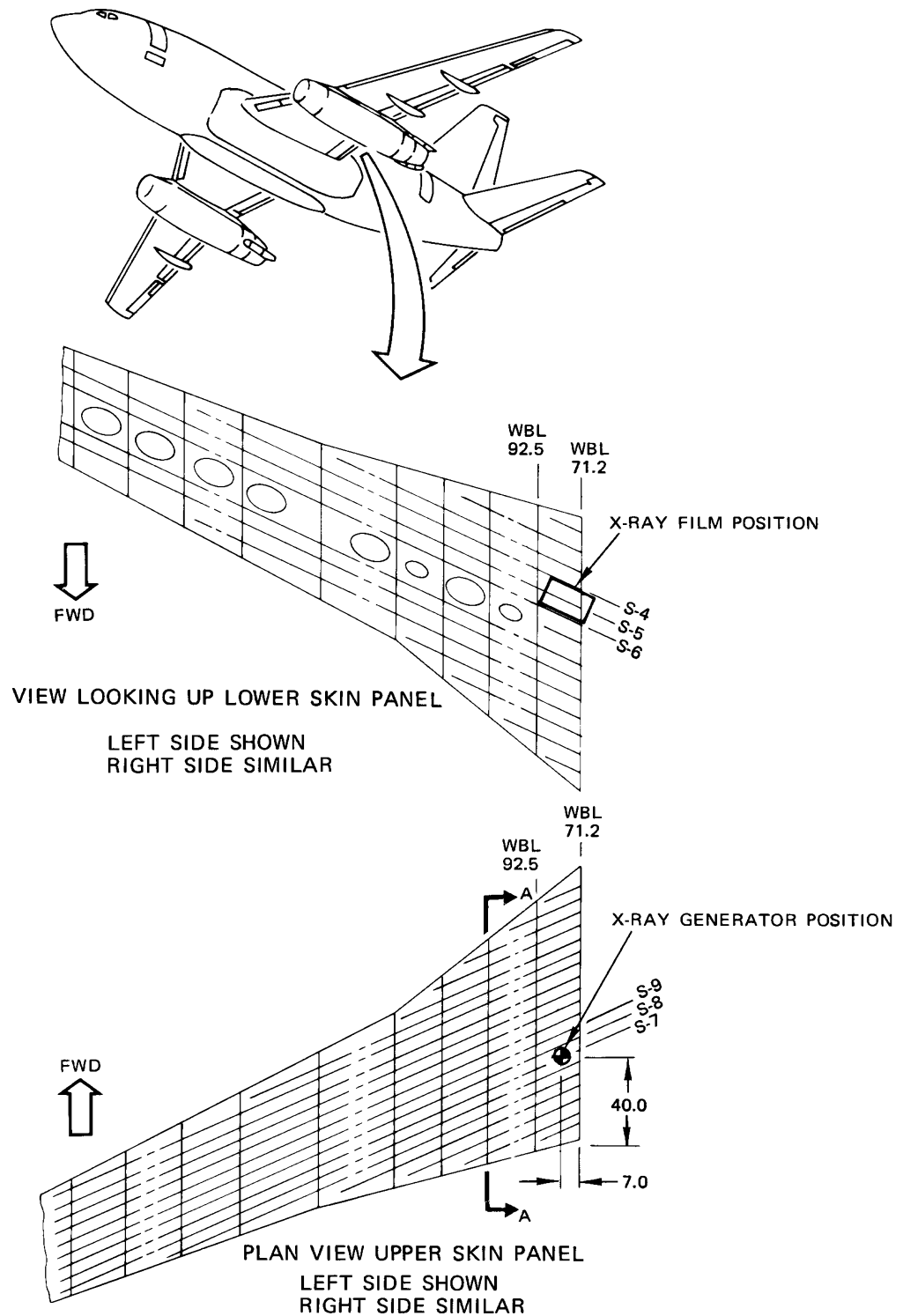
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2157420 S0000471064_V1

X-Ray Generator and Film Positioning
Figure 1 (Sheet 2 of 4)

ALL EFFECTIVITY

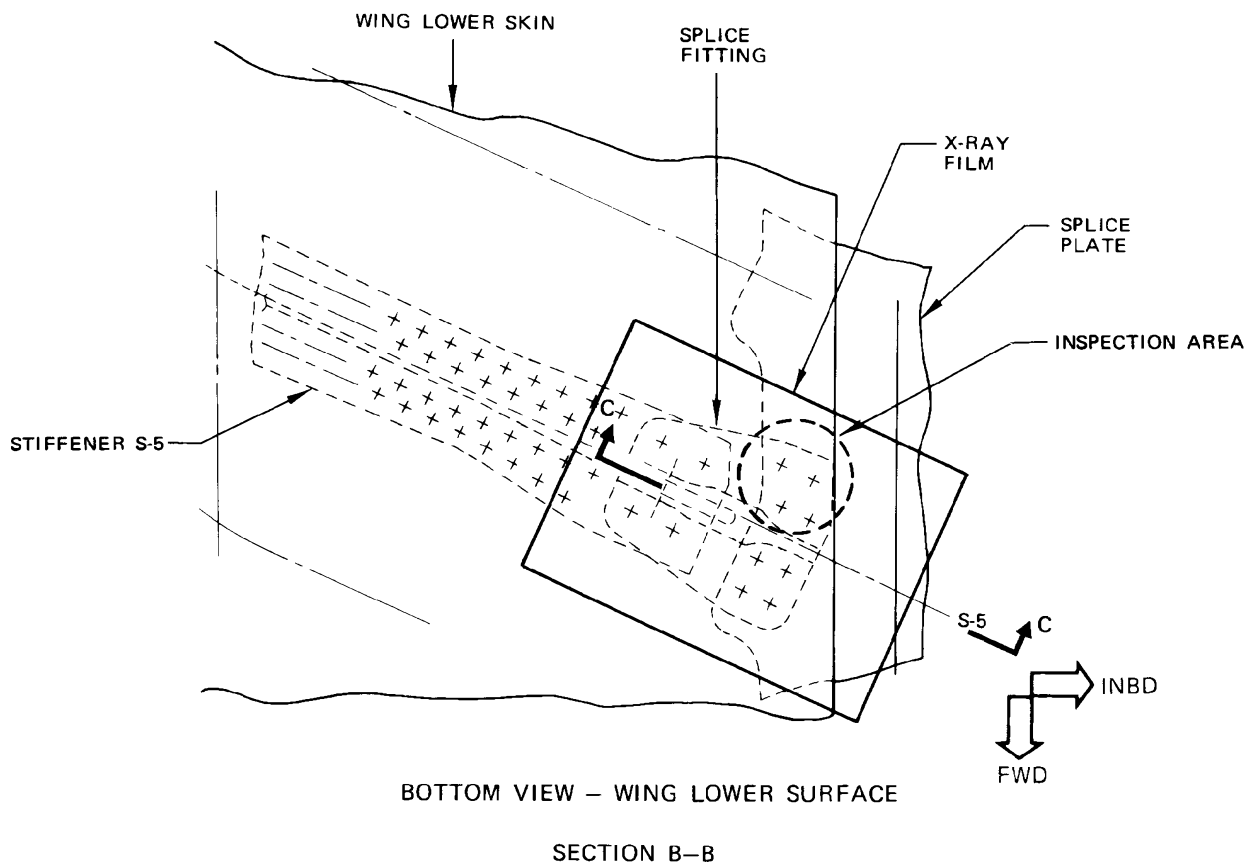
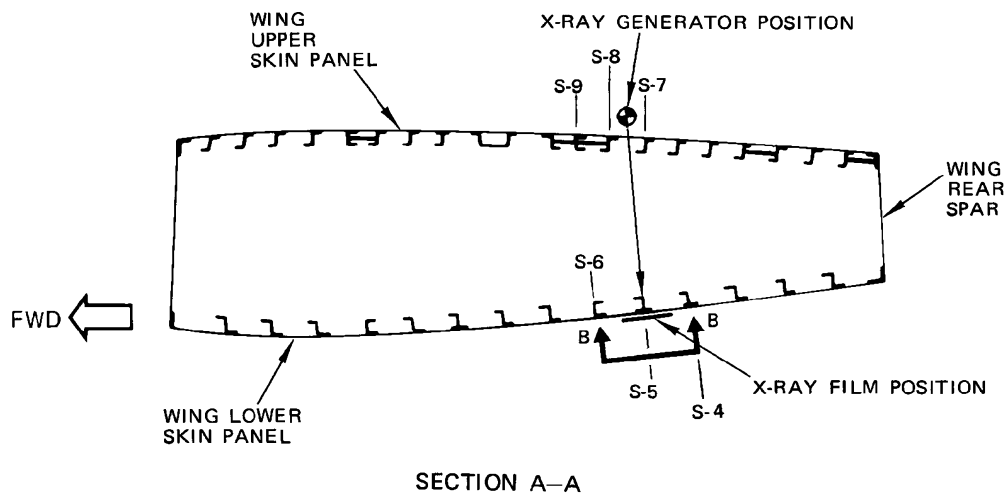
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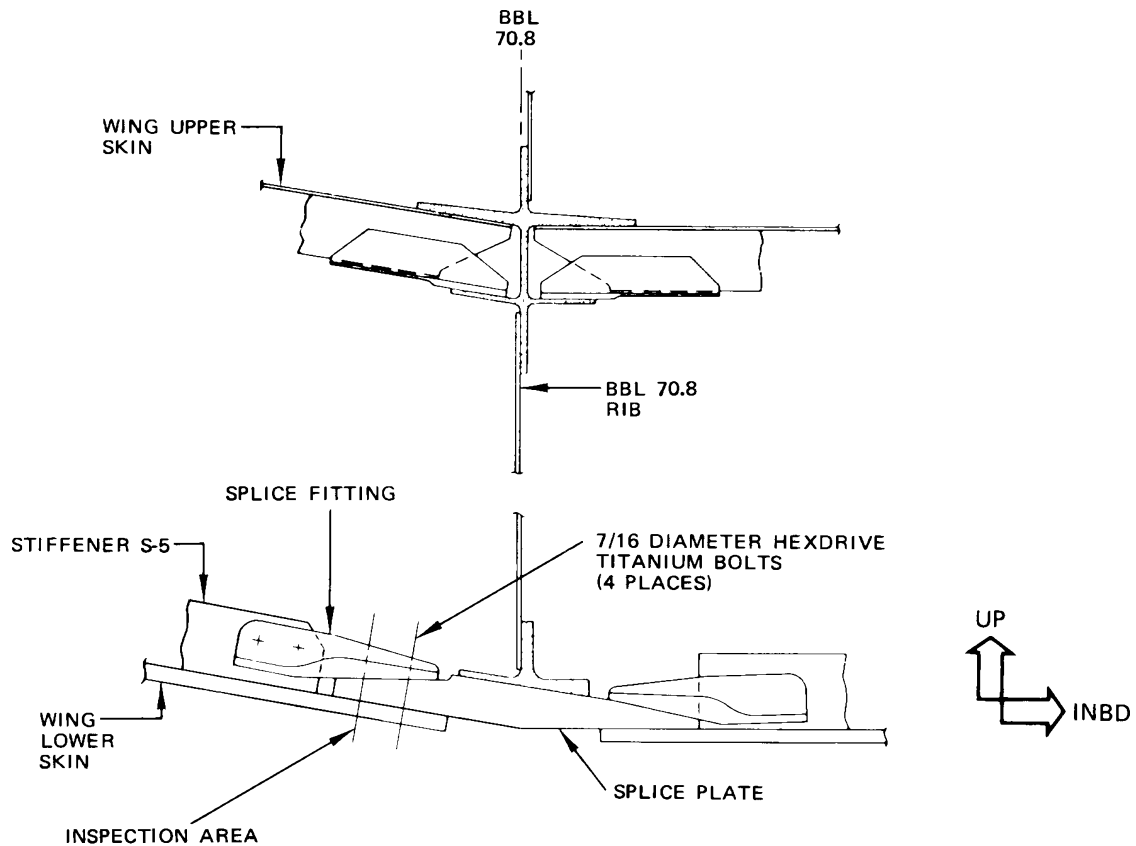
X-Ray Generator and Film Positioning
Figure 1 (Sheet 3 of 4)

2157422 S0000471065_V1

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SECTION C-C

2157425 S0000471066_V1

X-Ray Generator and Film Positioning
Figure 1 (Sheet 4 of 4)

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PART 2 - X-RAY

WING LOWER BBL 70.85 SPLICE PLATE ASSEMBLY AND INBOARD AND OUTBOARD SPLICE FITTINGS

1. Purpose

- A. To detect cracks which propagate from fastener holes in the splice plate assembly and splice fittings at the lower BBL 70.85 side-of-body splice, inboard and outboard sides.

NOTE: This inspection requires wing tank entry. Fuel tank must be drained and purged to a health safe condition (as defined by Chapter 28 of the Maintenance Manual) before entering.

- B. 737 Supplemental Structural Inspection Document (D6-37089) Reference:

- (1) Item: W-10

2. Equipment

- A. The equipment used to develop this technique is as follows:

- (1) Sperry portable 160 kV, side emission X-ray generator.
 - (2) Kodak M and AA ready-pack radiographic film.
 - (3) Lead screen, 0.030-inch thick or thicker to be placed behind film.

3. Prepare for the Inspection

- A. Drain and purge fuel tanks.
- B. Remove wing-to-body fairing.
- C. Gain access to tanks by removing access doors to both wing and wing center section.
- D. For cum line No. 1 through 310 remove fuel bladder and center tank backing boards.
- E. Select and cut film as shown in Figure 4 and listed in Figure 1.

4. Inspection Procedure

WARNING: PRECAUTIONS AND SAFETY PROCEDURES CONTAINED IN CHAPTER 28 OF THE MAINTENANCE MANUAL MUST BE FOLLOWED BY PERSONNEL ENTERING ANY TANK THAT HAS CONTAINED FUEL. POSSIBILITY OF EXPLOSION AND TOXIC DANGER EXISTS IN VICINITY OF FUEL TANKS WHICH HAVE CONTAINED FUEL.

- A. Position X-ray generator as shown in Figure 3 and Figure 4.
- B. Place film as shown in Figure 2 and Figure 4.

NOTE: In some areas it may be necessary to cut a cardboard or stiff paper template preparatory to film cutting. This assures adequate coverage of the inspection member.

NOTE: In some areas, such as near the rear spar, it may not be possible to get complete coverage of the rib chord. In these areas, place film to get as much coverage of rib chord horizontal flange as possible.

- C. Place 0.030-inch thick lead screen behind film to prevent excessive film fogging from backscatter.
- D. Give particular attention to potential cracks running fore and aft through the splice members at fastener holes.

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EFFECTIVITY	EXPOSURE NUMBER	FILM			SFD	GENERATOR SETTINGS	
		POSITION	ASTM CLASS	SIZE		KV	MAS
<div>1</div> <div>2</div> <div>3</div>	1	1	I A	4-1/2 x 17	48	120	1140
	2	2	I A	4-1/2 x 17	48	120	1140
	3	3	I A	14 x 17	48	130	870
	4	4	I A	4-1/2 x 17	48	120	1140
	5	5	I A	14 x 17	48	120	1050
	6	6	I A	4-1/2 x 17	48	120	960
<div>5</div>	1	1	I A ,II	4-1/2 x 17	48	120	960
	2	2	I A ,II	4-1/2 x 17	48	130	750
	3	3	I A ,II	14 x 17	48	120	750
	4	4	I A ,II	4-1/2 x 17	48	120	960
	5	5	I A ,II	14 x 17	48	120	960
	6	6	I A	4-1/2 x 17	48	130	750

2157427 S0000471068_V1

X-Ray Exposure Parameters
Figure 1 (Sheet 1 of 5)

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EFFECTIVITY	EXPOSURE NUMBER	FILM			SFD	GENERATOR SETTINGS	
		POSITION	ASTM CLASS	SIZE		KV	MAS
1	7	7	I A	4-1/2 x 17	48	120	1140
	8	8	I A	4-1/2 x 17	48	120	1080
	9	9	I A ,II	14 x 17	48	120	780
	10	10	I A	4-1/2 x 17	48	120	1140
	11	11	I A	14 x 17	48	120	960
	12	12	I A	4-1/2 x 17	48	120	1050
2	7	7	I A	4-1/2 x 17	48	120	1140
	8	8	I A	4-1/2 x 17	48	120	1140
	9	9	II A	14 x 17	48	110	1050
	10	10	I A	4-1/2 x 17	48	120	1140
	11	11	I A	14 x 17	48	120	960
	12	12	I A	4-1/2 x 17	48	120	1140

2157428 S0000471069_V1

X-Ray Exposure Parameters
Figure 1 (Sheet 2 of 5)

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EFFECTIVITY	EXPOSURE NUMBER	FILM			SFD	GENERATOR SETTINGS	
		POSITION	ASTM CLASS	SIZE		KV	MAS
3	7	7	I A	4-1/2 x 17	48	120	1140
	8	8	I A	4-1/2 x 17	48	120	1140
	9	9	I A ,II	14 x 17	48	120	960
	10	10	I A	4-1/2 x 17	48	120	1050
	11	11	I A	14 x 17	48	120	1050
	12	12	I A	4-1/2 x 17	48	120	1140
5	7	7	I A	4-1/2 x 17	48	120	960
	8	8	I A	4-1/2 x 17	48	120	960
	9	9	II A	14 x 17	48	110	1140
	10	10	I A	4-1/2 x 17	48	120	960
	11	11	I A	14 x 17	48	120	1140
	12	12	I A	4-1/2 x 17	48	120	750

2157429 S0000471070_V1

X-Ray Exposure Parameters
Figure 1 (Sheet 3 of 5)

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EFFECTIVITY	EXPOSURE NUMBER	FILM			SFD	GENERATOR SETTINGS	
		POSITION	ASTM CLASS	SIZE		KV	MAS
	1	1	I	4-1/2 x 17	48	120	960
	2	2	I , II	4-1/2 x 17	48	130	750
	3	3	I , II , II	14 x 17	48	120	1080
	4	4	I , II	4-1/2 x 17	48	120	960
	5	5	I , II , II	14 x 17	48	120	1080
	6	6	I	4-1/2 x 17	48	120	750
	7	7	I	4-1/2 x 17	48	120	960
	8	8	I	4-1/2 x 17	48	120	960
	9	9	I , II	14 x 17	48	120	960
	10	10	I	4-1/2 x 17	48	120	960
	11	11	I , II	14 x 17	48	120	960
	12	12	I	4-1/2 x 17	48	120	750

NOTES

- ALL DIMENSIONS ARE IN INCHES
- FILM WITH LEAD INTENSIFYING SCREENS SHOULD BE PLACED FARTHEST FROM THE X-RAY SOURCE WHEN MULTIPLE LOADING FILM

LEAD PACK FILM

2157430 S0000471071_V1

X-Ray Exposure Parameters
Figure 1 (Sheet 4 of 5)

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NOTES (CONT)

① CUM LINE NO. 1 THRU 5, 7

② CUM LINE NO. 6, 8 THRU 71, 73 THRU 83, 85 THRU 101, 103 THRU 109, 111 THRU 127, 129 THRU 135

③ CUM LINE NO. 136 THRU 142, 144 THRU 148, 150 THRU 154, 156, 159 THRU 161, 163, 165, 167 THRU 172, 174 THRU 183, 185 THRU 193, 195, 197, 198, 200 THRU 202, 204, 206, 207, 209 THRU 211, 213, 214, 216, 218 THRU 222, 224, 226 THRU 229, 231 THRU 233, 235 THRU 237, 239 THRU 241, 243, 244, 246 THRU 248, 250, 252, 253, 257 THRU 262, 264, 266, 267, 269 THRU 273, 275, 277, 279, 280, 282 THRU 285, 287, 291 THRU 293, 296, 323 THRU 325, 327, 331, 374, 375, 380, 383

④ CUM LINE NO. 560, 572, 578, 581, 584, 590, 595, 597, 600, 603, 605, 608, 610, 612, 614, 616, 618, 620, 621, 623, 625, 629, 631, 646, 647, 650, 652, 655, 666, 668, 672, 688, 690, 696, 698, 700, 702, 705, 709, 744, 746, 753, 755, 756, 758, 760, 761, 763, 765, 767, 768, 770, 771, 773 THRU 776, 778, 782, 784 THRU 786, 789, 792, 800, 801, 803, 804, 806, 808, 810, 812 THRU 820, 822 THRU 827, 831 THRU 833, 837, 839, 841, 845, 848 THRU 850, 852, 855 THRU 858, 861 THRU 865, 867, 868, 870 THRU 879, 882, 883, 885, 886, 888, 889, 892, 897, 898, 900, 901, 904 THRU 906, 908 THRU 916, 918, 919, 923, 924, 929, 932, 933, 938, 940, 942, 945 THRU 947, 949, 953 THRU 955, 957, 960, 961, 963 THRU 965, 968 THRU 970, 983, 985, 987, 989 THRU 991, 993, 994

⑤ ALL LINE NO. LESS ① THRU ④

2157432 S0000471072_V1

X-Ray Exposure Parameters
Figure 1 (Sheet 5 of 5)

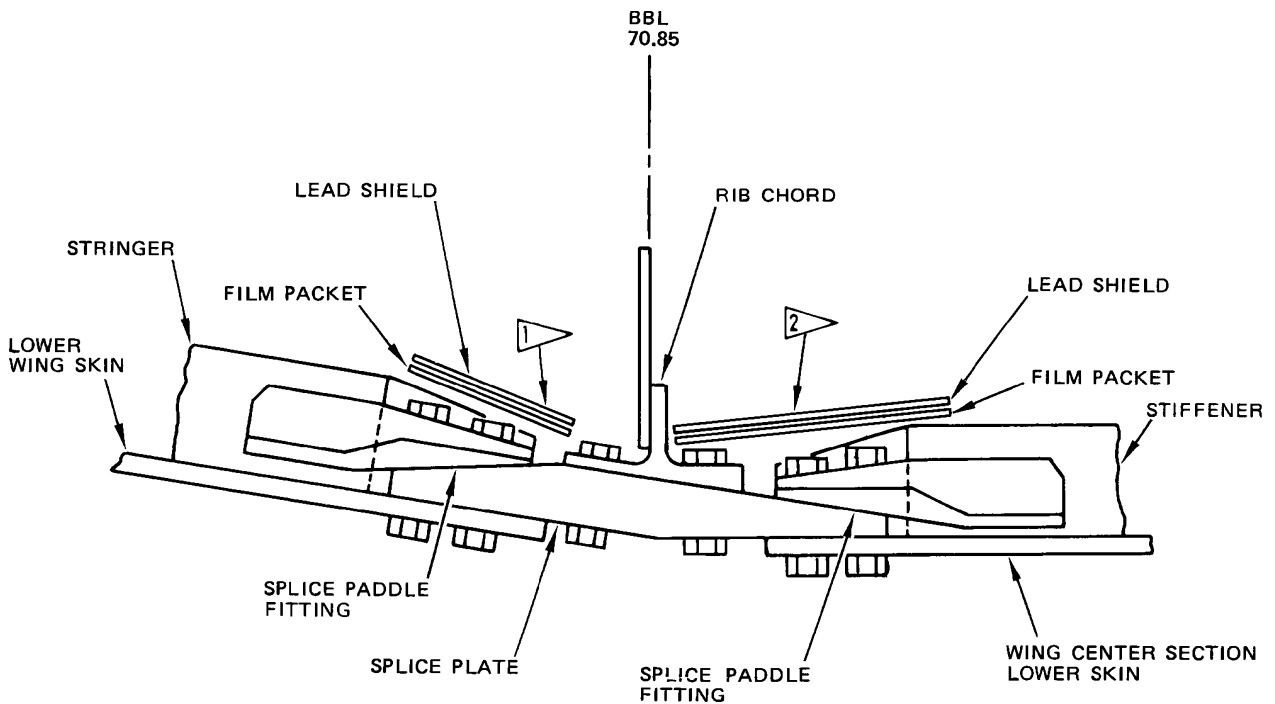
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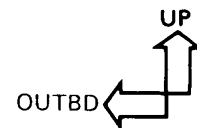
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NOTES

- EXTERNAL SPLICE PLATE NOT SHOWN

- 1 TYPICAL FILM PLACEMENT, ALL STRINGERS EXCEPT S-5 AND S-9, BOTH INBOARD AND OUTBOARD OF BBL 70.85
- 2 TYPICAL FILM PLACEMENT, STRINGERS S-5 AND S-9, BOTH INBOARD AND OUTBOARD OF BBL 70.85. CAREFUL COVERAGE OF INSPECTION FASTENERS COMMON TO RIB CHORD IS REQUIRED



2157433 S0000471073_V1

Wing Surface BBL 70.85 Splice
Figure 2

ALL EFFECTIVITY

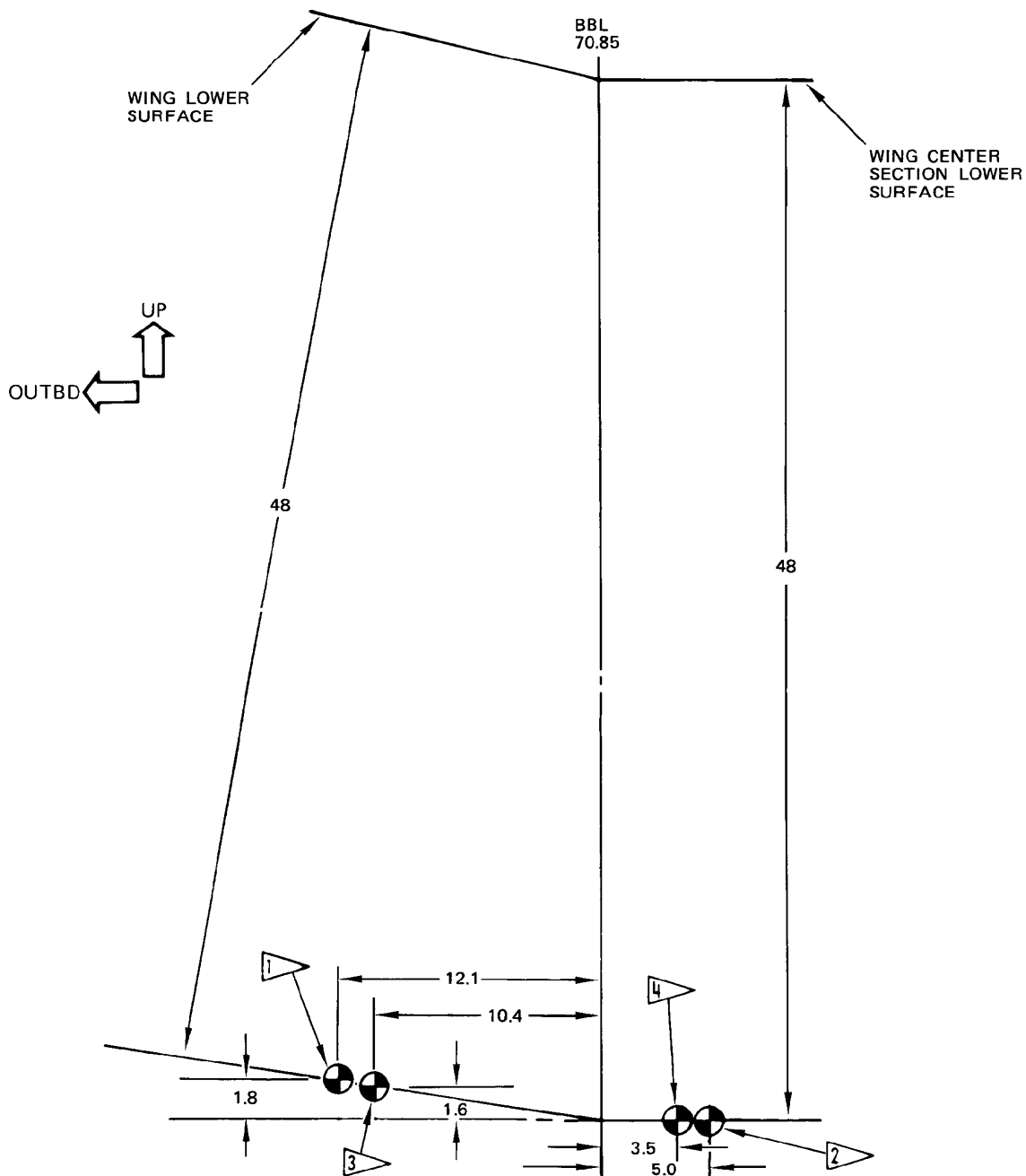
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NOTES

- ALL DIMENSIONS ARE IN INCHES
- LEFT SIDE SHOWN, RIGHT SIDE SIMILAR
- GENERATOR LOCATION

- 1 GENERATOR LOCATION FOR EXPOSURES 3 AND 5
- 2 GENERATOR LOCATION FOR EXPOSURES 9 AND 11
- 3 GENERATOR LOCATION FOR EXPOSURES 1, 2, 4 AND 6
- 4 GENERATOR LOCATION FOR EXPOSURES 7, 8, 10 AND 12

2157435 S0000471074_V1

**X-Ray Generator Positioning
Figure 3**

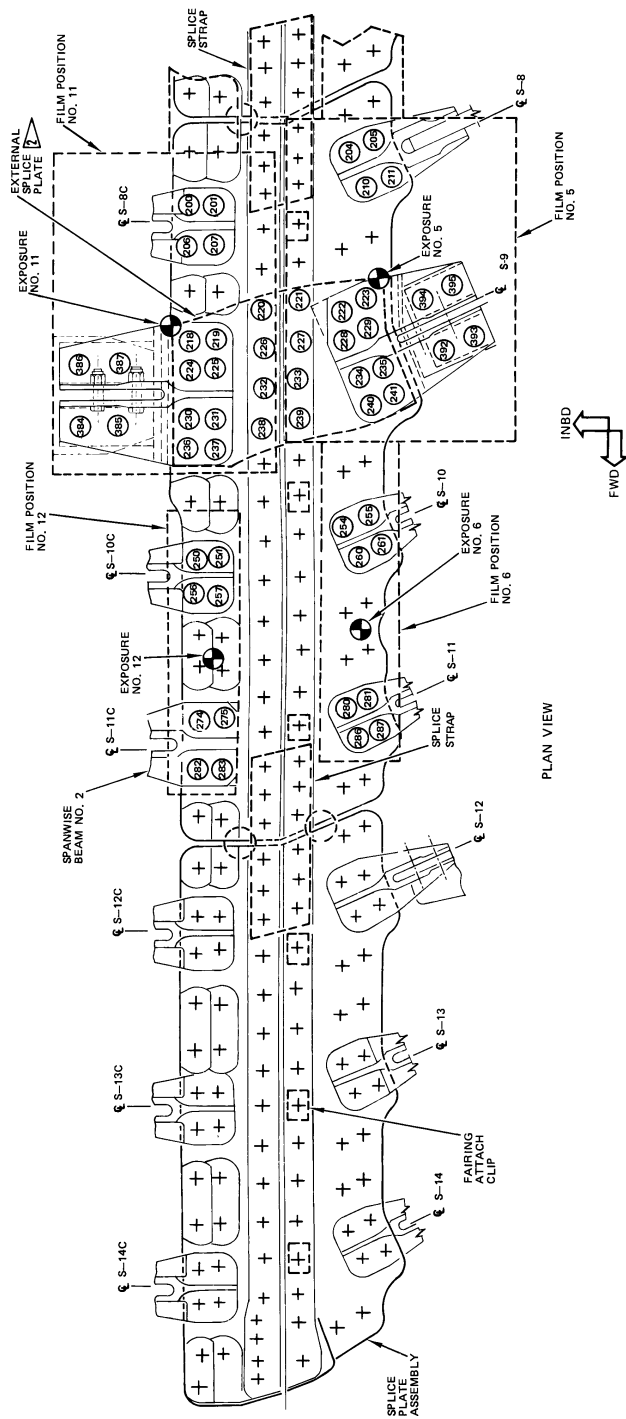
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Wing Lower Surface BBL 70.85 Splice
Figure 4 (Sheet 1 of 2)

2157438 S0000471076_V1

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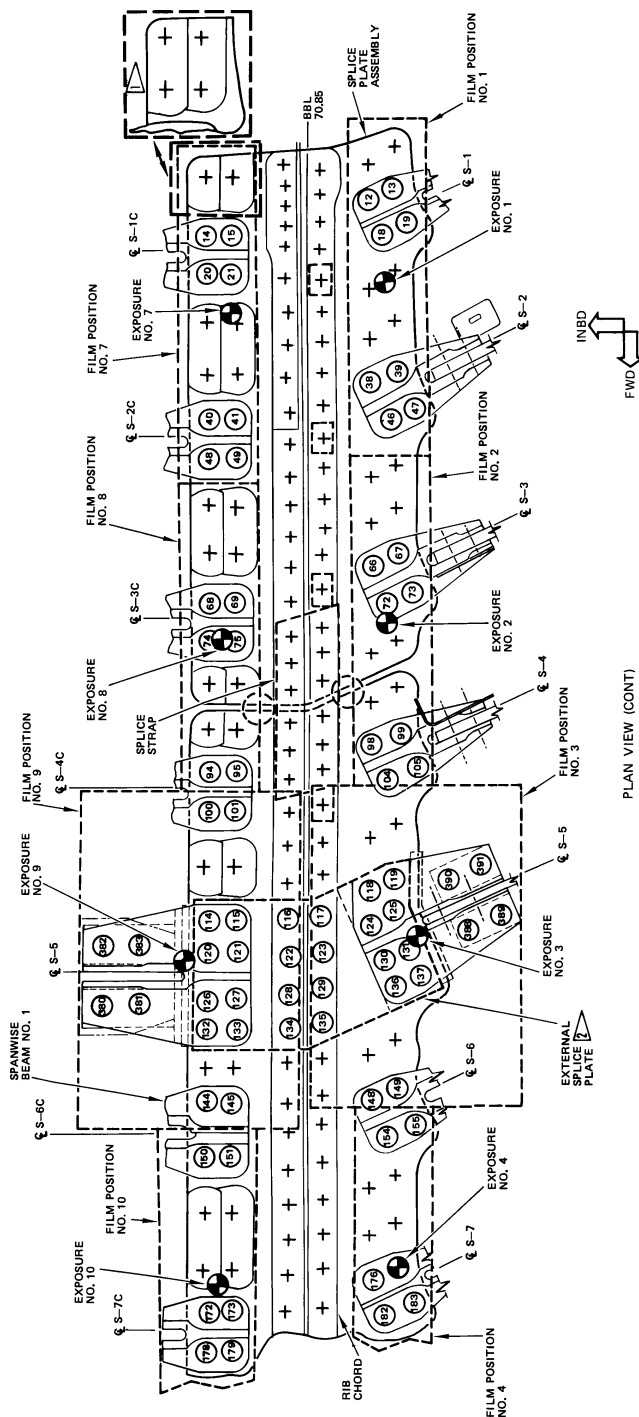
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PLAN VIEW (CONT)

- NOTES**
- LEFT SIDE SHOWN, RIGHT SIDE OPPOSITE
 - SEE FIGURE 1 FOR AIRPLANE EFFECTIVITY AND EXPOSURE INFORMATION
 - FASTENERS TO BE INSPECTED
 - X-RAY GENERATOR LOCATION
 - CUM LINE NOS. 1 THRU 5, 7 ONLY
 - EXTERNAL SPLICE PLATE ONLY FOR FLAGNOTE 4 EFFECTIVITIES PER FIGURE 1

Wing Lower Surface BBL 70.85 Splice
Figure 4 (Sheet 2 of 2)

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PART 2 - X-RAY

FRONT SPAR LOWER CHORD SPLICE PLATES INBOARD OF BBL 70.85

1. Purpose

- A. To detect cracks which propagate from specified locations in the front spar lower chord, internal and external splice plates inboard of BBL 70.85.

NOTE: This inspection requires wing tank entry. Fuel tank must be drained and purged to a "health safe" condition (as defined by Chapter 28 of the Maintenance Manual) before entering.

- B. 737 Supplemental Structural Inspection Document (D6-37089) Reference:

(1) Item: W-14

2. Equipment

- A. X-Ray Generator - Any equipment which will effectively penetrate 2.0 inches (5.1 cm) of aluminum and satisfy the requirements of this procedure may be used. This procedure was developed using a Sperry 160 kV, 5 mA, self-rectified, portable unit.
- B. Film - Any low speed, fine grain, high contrast (ASTM Class I) film may be used. This procedure was developed using Kodak M film. The film was processed by automatic processor.
- C. Intensifying Screen - Lead screens 0.005 inch front and 0.010 inch rear for intensification and scatter radiation reduction.
- D. Image Quality Indicators (IQI) - This procedure was developed using DIN type wire penetrameters to obtain a sensitivity of better than 1% in the area of radiographic interest.

NOTE: Refer to Part 1, 51-02-00 for a description and use of image quality indicators in conjunction with radiographic exposures.

3. Prepare for the Inspection

- A. Drain and purge fuel tanks.
- B. Gain access to tanks by removing access doors to wing center section.
- C. Remove wing/body fairings below front spar.
- D. Observe standard radiation safety precautions.

4. Inspection Procedure

WARNING: X-RADIATION IS A POTENTIAL HEALTH HAZARD. CARRY OUT STANDARD RADIATION SAFETY PRECAUTIONS.

- A. Identify inspection area. Refer to Figure 2.

WARNING: PRECAUTIONS AND SAFETY PROCEDURES CONTAINED IN CHAPTER 28 OF THE MAINTENANCE MANUAL MUST BE FOLLOWED BY PERSONNEL ENTERING ANY TANK THAT HAS CONTAINED FUEL. POSSIBILITY OF EXPLOSION AND TOXIC DANGER EXISTS IN VICINITY OF FUEL TANKS WHICH HAVE CONTAINED FUEL.

- B. Place film and intensifying screens for exposure No. 1 as shown in Figure 2.
- C. Position X-ray generator per Figure 2.
- D. Adjust generator settings to penetrate 2.0 inches (5.1 cm) aluminum using Figure 1 as a guide.

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- E. Expose film to obtain a density of between 2 and 3.5 in the area of radiographic interest shown in Figure 2.
- F. Use an image quality indicator to obtain a film sensitivity of better than 1% in the area of radiographic interest.
- G. Make similar radiographic exposures of opposite wing.

5. Inspection Results

- A. Review radiographs paying particular attention for cracks emanating from fastener holes, in a fore and aft direction.

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X-RAY PARAMETERS								
EXPOSURE NUMBER	FILM			SIZE	SFD	GENERATOR SETTINGS		PENETRATION THICKNESS
	SCREENS		ASTM CLASS			KV	MAS	
	FRONT	REAR						
1	0.005 (0.013)	0.010 (0.025)	I	5x7 (13x18)	48(122)	140	1920	2.0 (5.1)

NOTES

- ALL DIMENSIONS ARE IN INCHES (CENTIMETERS IN PARENTHESES) EXCEPT AS NOTED.
- GENERATOR SETTINGS SHOULD BE USED AS A GUIDE. X-RAY EQUIPMENT, FILM AND PROCESSING CAN SIGNIFICANTLY AFFECT FILM DENSITIES.

2157440 S0000471079_V1

X-Ray Generator and Film Parameters
Figure 1



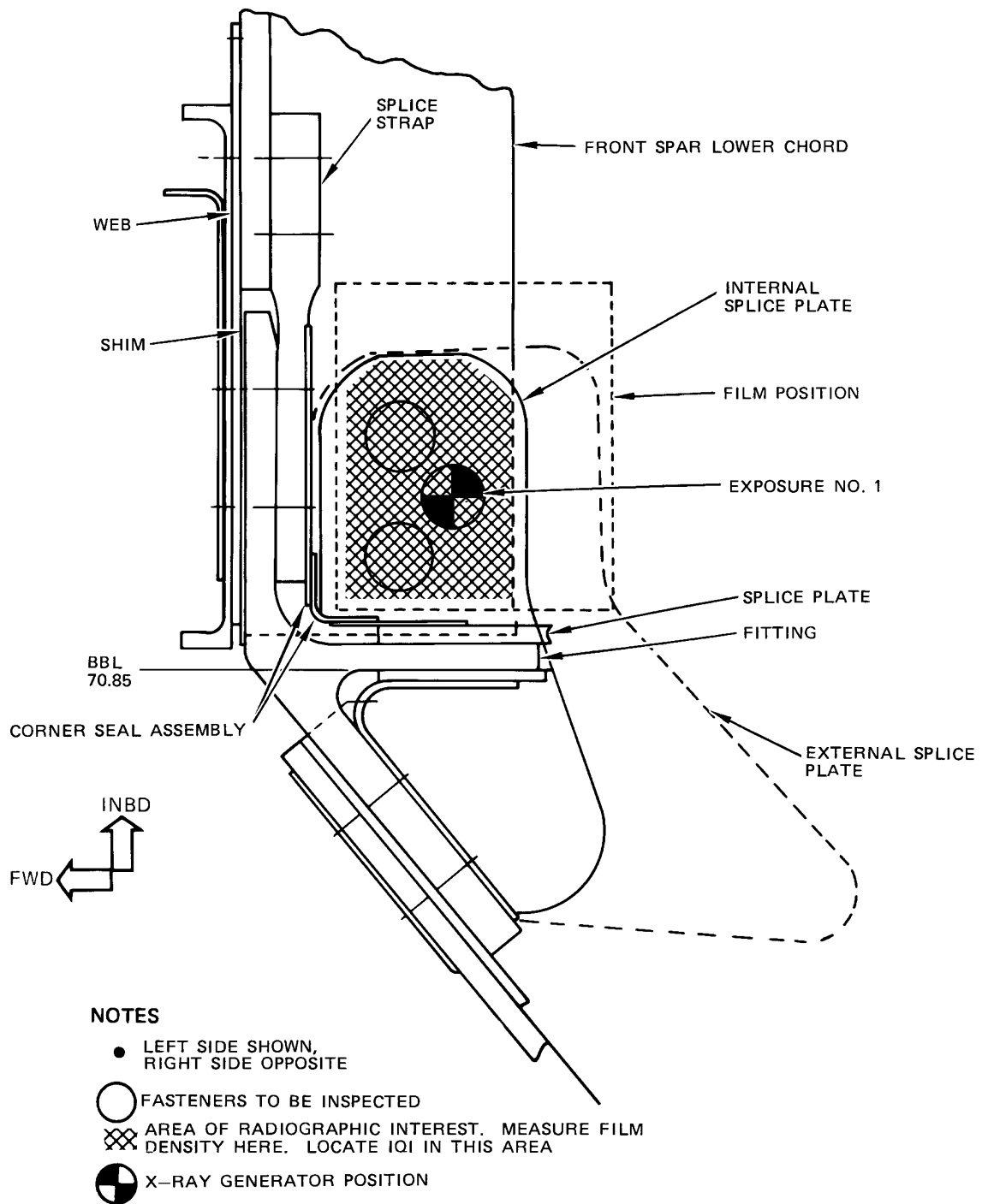
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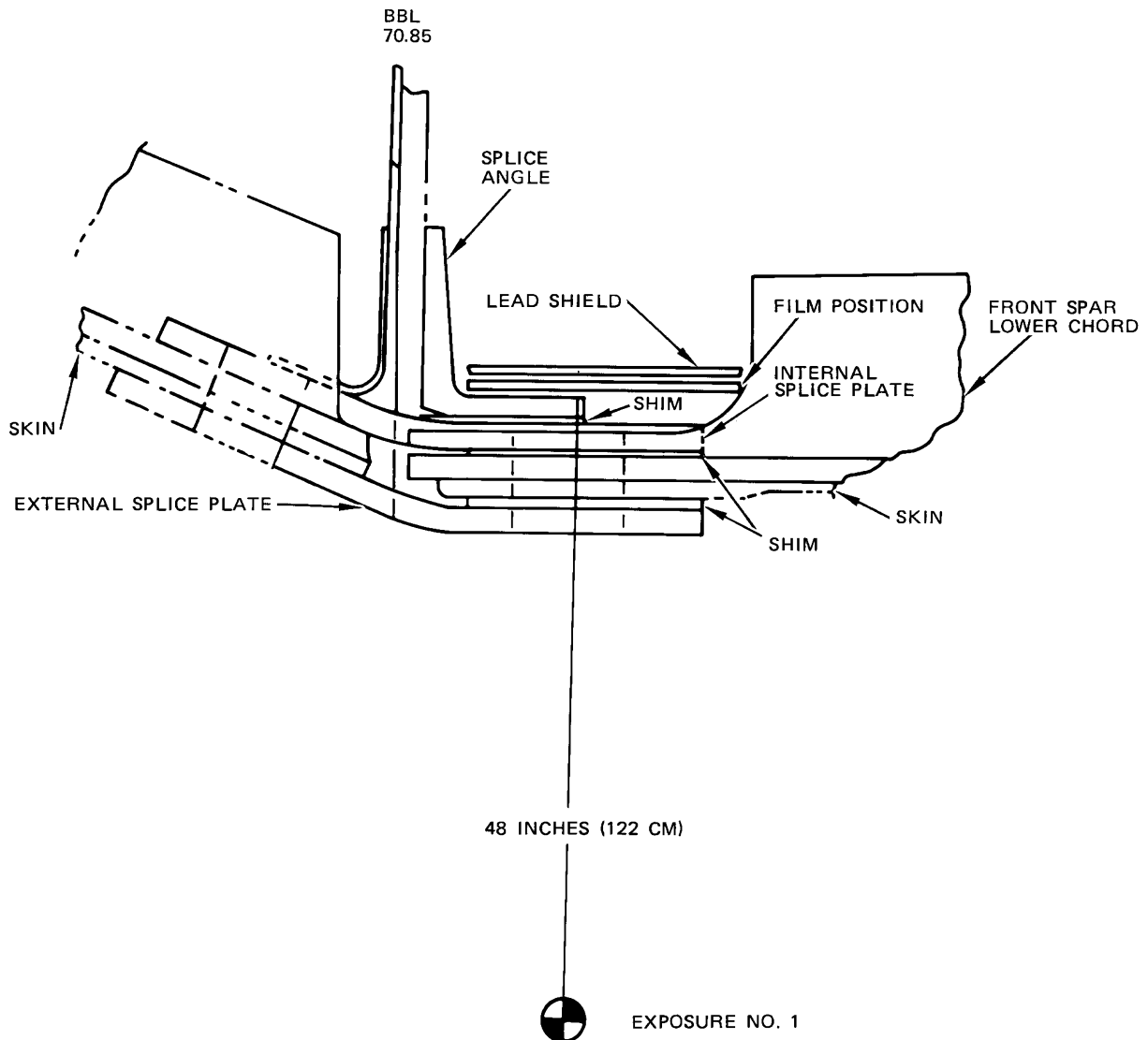
2157443 S0000471080_V1

Front Spar Lower Chord Horizontal Flange
Figure 2 (Sheet 1 of 2)

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NOTE



X-RAY GENERATOR POSITION

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Front Spar Lower Chord Horizontal Flange
Figure 2 (Sheet 2 of 2)

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PART 2 - X-RAY

**WING LOWER SURFACE TYPICAL SKIN AND STRINGERS S-6, S-8, S-10, SPANWISE SPLICE
STRINGERS S-5 AND S-9 AND FRONT SPAR LOWER CHORD**

1. Purpose

- A. To detect cracks which propagate from fastener holes in the wing lower surface typical skin and stringers S-6, S-8 and S-10, in the spanwise splice stringers at S-5 and S-9, and in the front spar lower chord at areas common to the engine nacelle.

NOTE: This procedure satisfies the X-ray inspection requirements of SSID Items W-19, W-27, and W-42. To inspect for a particular item, it is sufficient to use only the X-ray exposures and film positions which are part of that item as noted on Figure 1.

- B. 737 Supplemental Structural Inspection Document (D6-37089) Reference:

- (1) Item: W-19
- (2) Item: W-27
- (3) Item: W-42

2. Equipment

- A. X-Ray Generator - Any equipment which will effectively penetrate 1.5 inch (3.8 cm) of aluminum and satisfy the requirements of this procedure may be used. This procedure was developed using a Sperry 160 kV, 5 mA, end anode, side emission, self-rectified, portable unit.
- B. Film - Any low speed, fine grain, high contrast (ASTM Class I) film may be used. This procedure was developed using Kodak M film.

NOTE: It is recommended that lead screens be used for intensification and radiation scatter reduction.

- C. Image Quality Indicator (IQI) - This procedure was developed using DIN type wire penetrameters to obtain a sensitivity of better than 2 percent in the area of radiographic interest.

NOTE: Refer to Part 1, 51-02-00 for description and use of image quality indicators in conjunction with radiographic exposures.

3. Prepare for the Inspection

- A. Drain and purge wing tanks.
- B. Gain access for film placement by removing engine, nacelle and related removable hardware, as necessary. Skate angles should also be removed if possible.
- C. Gain access for penetrameter placement by removing wing access doors 7215L - 7217L and 7415R - 7417R (upper), and 7204L, 7205L, 7404R, and 7405R (lower). Place IQI per Figure 3 and Figure 4.
- D. Wipe lower skin inspection areas clean.
- E. Mark off generator placement locations on the upper wing skin using grease pencil per Figure 2.
- F. Carry out standard radiation safety precautions.

4. Inspection Procedure

- A. Place film for required exposure per Figure 3 and Figure 4.

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WARNING: X-RADIATION IS A POTENTIAL HEALTH HAZARD. CARRY OUT STANDARD RADIATION SAFETY PRECAUTIONS.

- B. Position X-ray generator for required exposure per Figure 2 and Figure 3.
- C. Adjust generator settings to penetrate thickness of aluminum per Figure 1 and carry out exposure.
- D. Repeat above steps when carrying out remaining exposures.
- E. Make similar radiographic exposures on opposite side of airplane.

5. **Inspection Results**

- A. Review radiographs paying particular attention to cracks running fore and aft out of the stringer flange. Figure 5 is provided to assist in identifying structures visible on the radiograph.

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X-RAY PARAMETERS								
EXPOSURE NUMBER	LOCATION	FILM			SFD	GENERATOR SETTINGS		PENETRATION THICKNESS
		POSI- TION	ASTM CLASS	SIZE		KV	MAS	
1	FRONT SPAR/ S-10 INBD	1	I	14 x 17 (36 x 43 cm)	80 (203 cm)	150	1050	1.1 (2.8 cm)
2	FRONT SPAR/ S-10 OUTBD	2	I	14 x 17 (36 x 43 cm)	80 (203 cm)	150	1050	1.1 (2.8 cm)
3	S-8 AND S-9 INBD	3	I	14 x 17 (36 x 43 cm)	80 (203 cm)	150	1050	1.1 (2.8 cm) to 1.5 (3.8 cm)
4	S-8 AND S-9 OUTBD		I	7 x 17 (18 x 43 cm)	80 (203 cm)	150	1050	1.1 (2.8 cm) to 1.5 (3.8 cm)
			I	3.5 x 17 (9 x 43 cm)				
5	S-5 AND S-6 INBD	6	I	14 x 17 (36 x 43 cm)	80 (203 cm)	150	1050	1.1 (2.8 cm) to 1.5 (3.8 cm)
6	S-5 AND S-6 OUTBD	7	I	14 x 17 (36 x 43 cm)	80 (203 cm)	150	1050	1.1 (2.8 cm) to 1.5 (3.8 cm)

NOTES

- ALL DIMENSIONS ARE IN INCHES (CENTIMETERS IN PARENTHESES)
- GENERATOR SETTINGS SHOULD ONLY BE USED AS A GUIDE. EQUIPMENT, FILM AND PROCESSING DIFFERENCES CAN SIGNIFICANTLY AFFECT INSPECTION RESULTS. FILM WAS DEVELOPED USING AUTOMATIC PROCESSING.
- A DENSITY OF BETWEEN 2 AND 3.5 IS REQUIRED IN THE AREA OF RADIOGRAPHIC INTEREST.
- A RADIOGRAPHIC SENSITIVITY OF BETTER THAN 2% IS REQUIRED IN THE AREA OF RADIOGRAPHIC INTEREST.

PART OF SSID ITEMS W-19B AND W-19C

PART OF SSID ITEM W-27G

PART OF SSID ITEM W-42

PART OF SSID ITEM W-27C

PART OF SSID ITEMS W-27C AND W-27D

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Exposure Information
Figure 1

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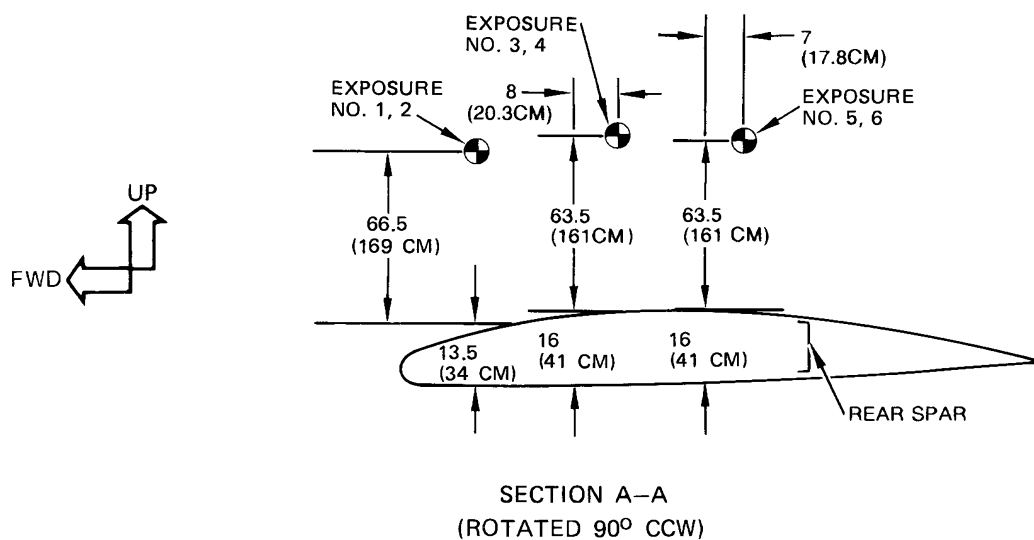
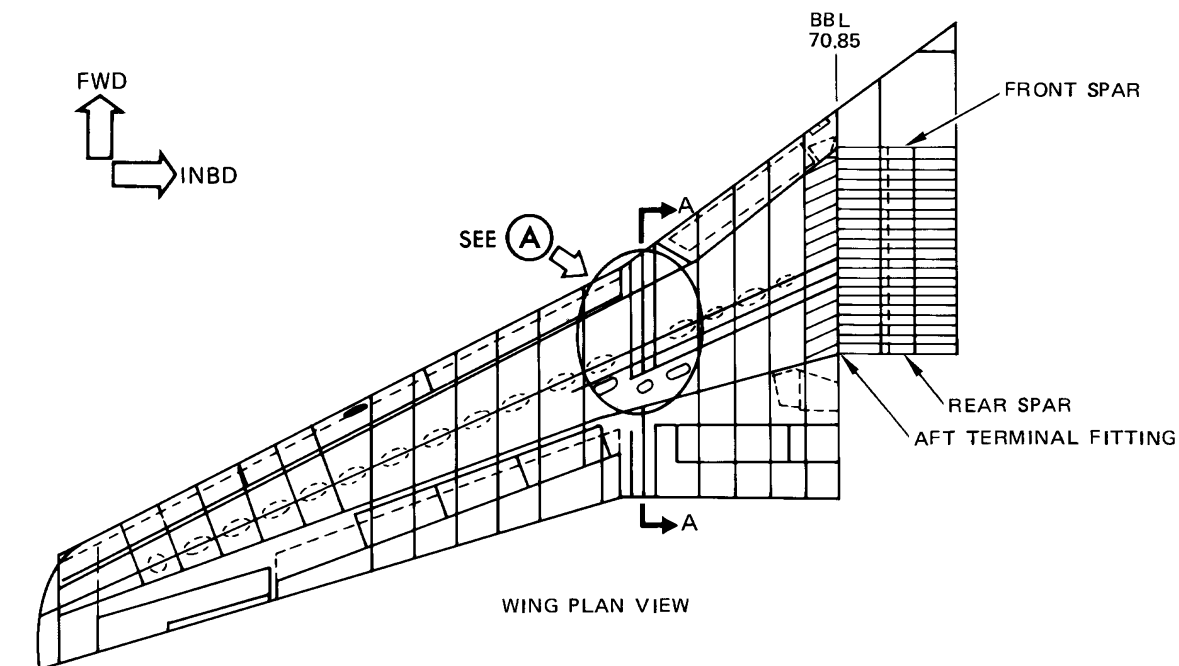
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NOTES

- LEFT SIDE SHOWN, RIGHT SIDE SIMILAR
- ALL DIMENSIONS ARE IN INCHES (CENTIMETERS IN PARENTHESES)
- ANGLE TUBE HEAD ABOUT 5° FORWARD TO ALIGN X-RAY BEAM WITH FILM, IF NECESSARY
- X-RAY GENERATOR POSITION

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**X-Ray Generator Positions
Figure 2 (Sheet 1 of 2)**

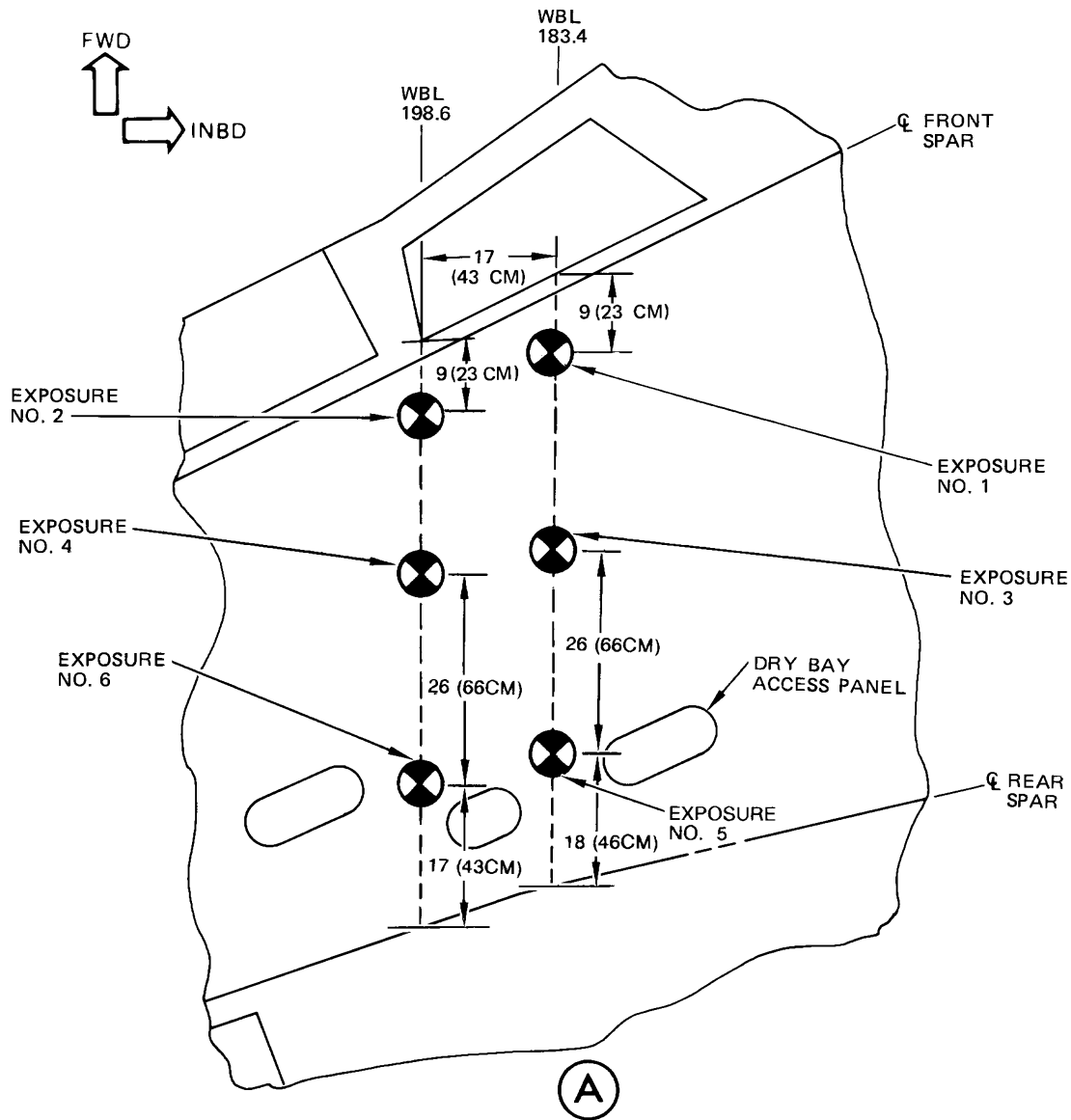
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NOTES

- ALL DIMENSIONS ARE IN INCHES (CENTIMETERS IN PARENTHESES)
- X-RAY GENERATOR POSITION

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X-Ray Generator Positions
Figure 2 (Sheet 2 of 2)

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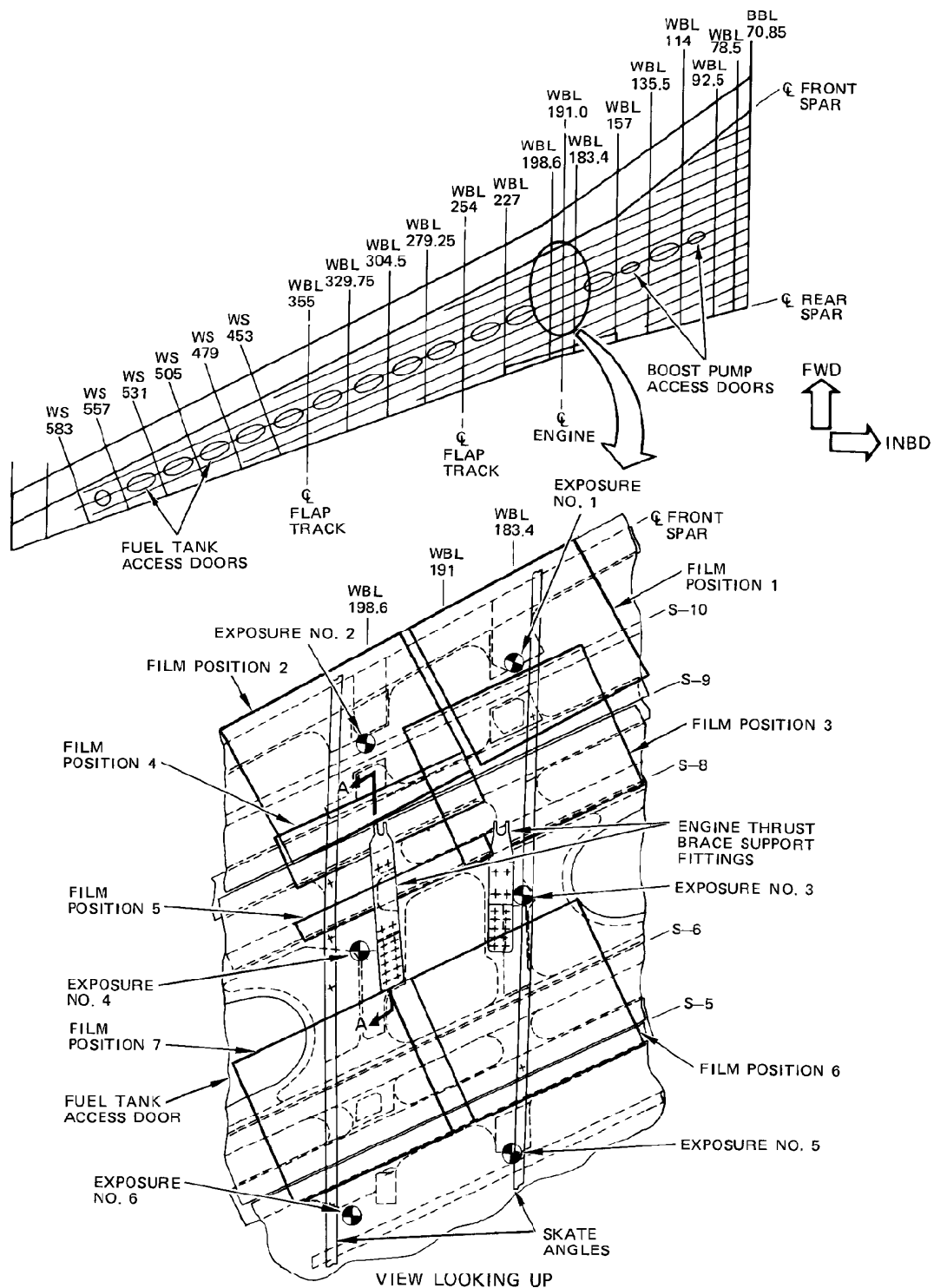
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**X-Ray Film Positioning
Figure 3 (Sheet 1 of 2)**

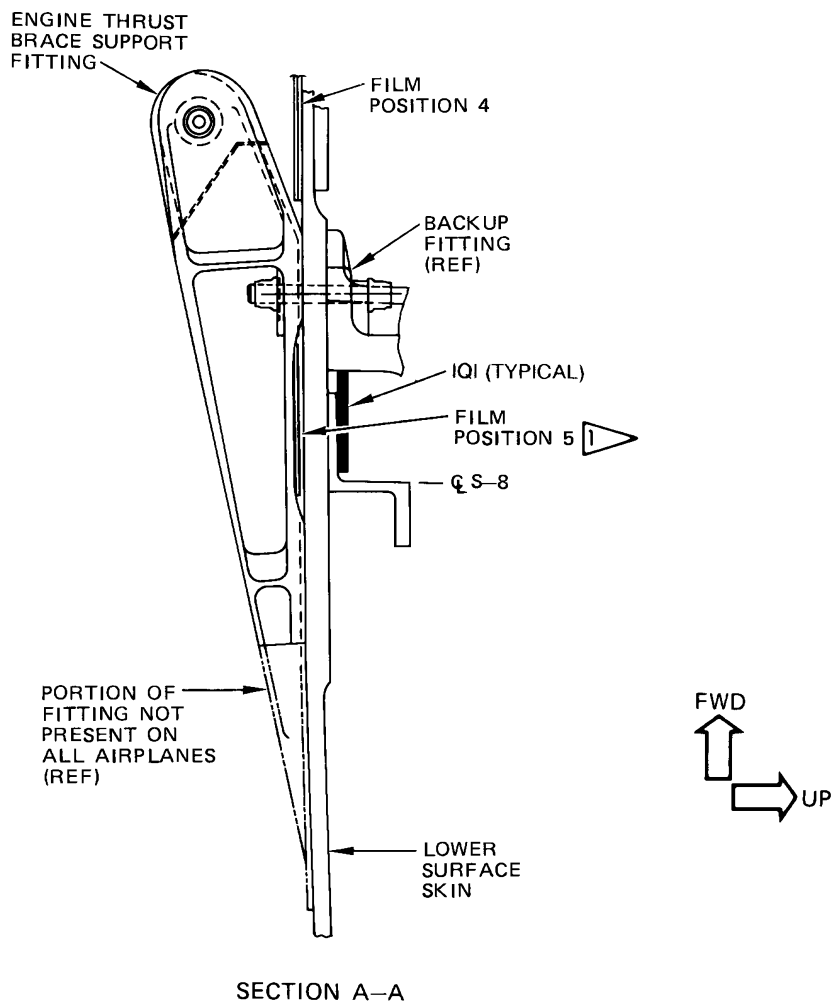
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NOTES

- VIEW LOOKING UP
- RIGHT WING SHOWN, LEFT WING OPPOSITE
- ALL DIMENSIONS ARE IN INCHES (CENTIMETERS IN PARENTHESES)
- ⊙ X-RAY GENERATOR POSITION
- ▶ SLIDE 3.5 X 17 (9 X 43 CM) FILM THROUGH GAP TO PLACE FILM

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**X-Ray Film Positioning
Figure 3 (Sheet 2 of 2)**

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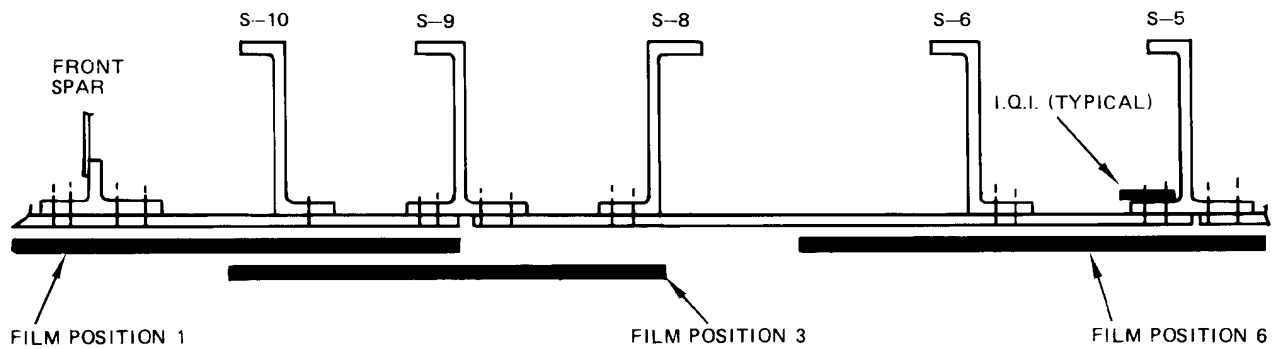
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NOTES

- PLACE IQI ON STRINGER FLANGE FASTENERS. IQI WIRE OR HOLE EQUAL TO 2% SECTION THICKNESS SHOULD BE VISIBLE ON COMPLETED RADIOGRAPH
- IQI SHOULD BE LOCATED ABOVE SKATE ANGLE IF SKATE ANGLE HAS NOT BEEN REMOVED.

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Wing Lower Skin and Stringers Typical Section WBL 183.4
Figure 4 (Sheet 1 of 2)

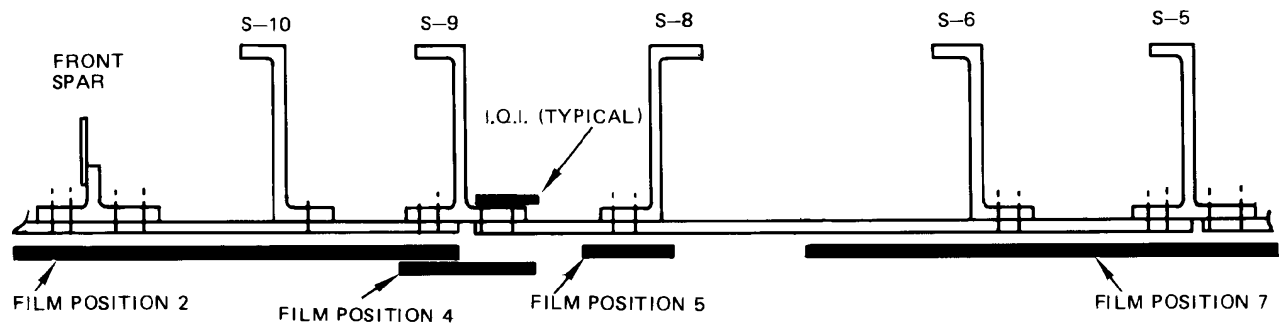
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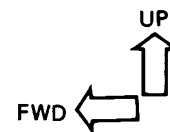
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NOTES

- PLACE IQI ON STRINGER FLANGE FASTENERS. IQI WIRE OR HOLE EQUAL TO 2% SECTION THICKNESS SHOULD BE VISIBLE ON COMPLETED RADIOGRAPH.
- IQI SHOULD BE LOCATED ABOVE SKATE ANGLE IF SKATE ANGLE HAS NOT BEEN REMOVED.



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Wing Lower Skin and Stringers Typical Section WBL 183.4
Figure 4 (Sheet 2 of 2)

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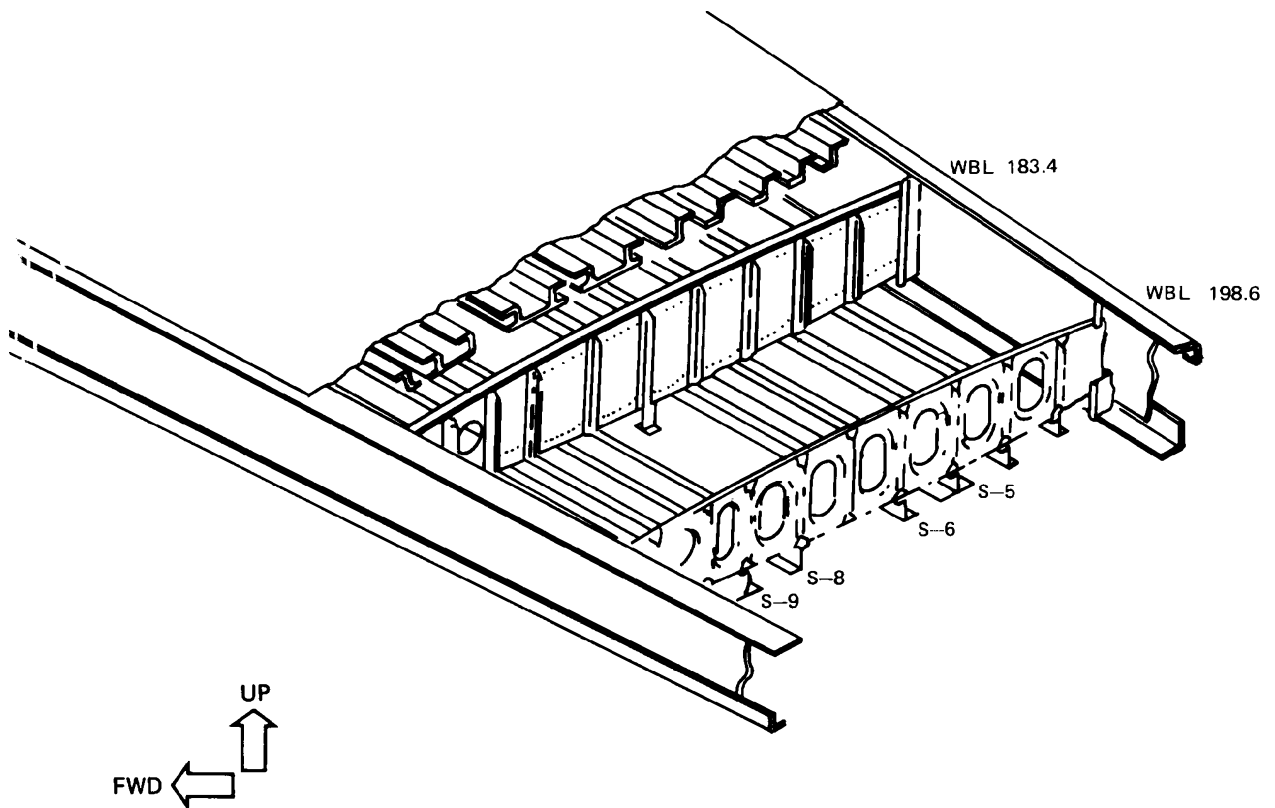
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Typical Wing Interspar Structure
Figure 5

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