

別添 2 C V R による交信及び会話の記録

(注) AEIS-Aeronautical Enroute Information Service 航空路情報提供業務
 ATIS-Automatic Terminal Information Service 飛行場情報放送業務
 ACC-Tokyo Area Control Center 東京コントロール (東京管制区管制所)
 APP-Tokyo Approach Control 東京アプローチコントロール (東京進入管制所)
 TWR-Tokyo Control Tower タワー (東京飛行場管制所)
 JAL-Japan Air Tokyo (Company) 日本航空社用無線

CAP-Captain of Japan Air Lines 350 日本航空 350 便機長
 COP-Co-pilot of Japan Air Lines 350 " 副操縦士
 F/E-Flight Engineer of Japan Air Lines 350 " 航空機関士
 STW-Stewardess/Assistant Purser of Japan Air Lines 350 " 客室乗務員

JL503-Japan Air Lines 503 日本航空 503 便 (東京 8.20 発 - 札幌 9.45 着、DC-8)
 NH16-All Nippon Airways 16 全日本空輸 16 便 (大阪 7.45 発 - 東京 8.45 着、L-1011)
 NH81-Aii Nippon Airways 81 " 81 便 (東京 8.25 発 - 沖縄 1.05 着、B-747SR)
 NH171-Aii Nippon Airways 171 " 171 便 (東京 8.10 発 - 米子 9.30 着、B-737)
 NH244-Aii Nippon Airways 244 " 244 便 (福岡 7.25 発 - 東京 8.55 着、L-1011)
 NH621-All Nippon Airways 621 " 621 便 (東京 7.55 発 - 鹿児島 9.40 着、L-1011)
 JGV1714-Japan Ground Self Defence Force V 1714 陸上自衛隊 V 1714.
 JN3091-Japan Maritime Self Defence Force 3091 海上自衛隊 3091.

..... 判読不能を示す部分
 _____ 判読不確実を示す部分
 () 補足説明及び作動音等

Time	Agency	Air to Ground Communication (ATC, COMPANY, AEIS & ATIS)	Cockpit Area Microphone (Includes Interphone)
08:11:19	AEIS	KOMATSU SNOW REMOVAL COMPLETED AT 2220. AIRPORT 2230 NEW TOKYO, WIND 290 DEGREES 1 KNOT, VISIBILITY 10 KILOMETERS, CLOUD 1 OKTAS 3000, TEMPERATURE MINUS 5, DEW POINT MINUS 8, QNH 3017 INCHES. TOKYO WIND 350 DEGREES 13 KNOTS CAVOK, TEMPERATURE 1, DEW POINT MINUS 9, QNH 3017 INCHES. OSAKA WIND 330 DEGREES 5 KNOTS, VISIBILITY 10 KILOMETERS, CLOUD 1 OKTAS 5000, TEMPERATURE MINUS 2, DEW POINT MINUS 5, QNH 3029 INCHES. FUKUOKA WIND CALM, VISIBILITY 10 KILOMETERS. HIROSHIMA WIND 050 DEGREES 3 KNOTS, VISIBILITY 10 KILOMETERS. MATSUYAMA WIND 140 DEGREES 5 KNOTS, VISIBILITY 10 KILOMETERS. CONTACT TOKYO INFORMATION ON 135.5 FOR FURTHER INFORMATION. THIS IS TOKYO INFORMATION KOWA QUEBEC, ENROUTE INFORMATION SIGMET NEW TOKYO VALID UNTIL 0020 MODERATE TO SEVERE CLEAR TURBULENCE FORECAST IN AREA OKINAWA AND EXPANDING TO THE PACIFIC (08:12:40)	
08:12:44	ATIS	THIS IS TOKYO INTERNATIONAL	

		AIRPORT, INFORMATION ECHO, MET REPORT TOKYO 2300, WIND 350 DEGREES 12 KNOTS, VISIBILITY 25 KILOMETERS, 1 OKTAS 5000 FEET, TEMPERATURE 1, DEW POINT MINUS 9, QNH 3017 INCHES, LANDING RUNWAY 33 RIGHT ILS APPROACH, DEPARTURE RUNWAY 04 AND 33 RIGHT, INFORM TOKYO APPROACH OR TOKYO GROUND ON INITIAL CONTACT THAT YOU HAVE RECEIVED INFORMATION ECHO. THIS IS TOKYO INTERNATIONAL AIRPORT, INFORMATION ECHO, MET REPORT TOKYO 230 (08:13:34)	
08:14:15	ACC	Japan Air 350, contact Tokyo on 119. 3.	
08:14:20	COP	Roger, Japan Air 350 119. 3.	
08:14:28	COP	Tokyo Control, Japan Air 350, maintain 290.	
	ACC	Japan Air 350, Tokyo Control, you are cleared to Weston via flight planned route. Maintain flight level 290, over.	
	COP	Roger, Japan Air 350, cleared to Weston via flight planned route. Maintain 290.	
08:14:49	ACC	Japan Air 350, that's affirmative.	
08:15:19	NH621	Ah, Tokyo Control, All Nippon 621 ah climbing flight level 280 over.	
	ACC	All Nippon 621, Tokyo Control roger, say altitude leaving.	
	NH621	Ah 621, say again please.	
	ACC	All Nippon 621, say altitude leaving.	

08:15:44	NH621 ACC	Roger, now passing 128 over. All Nippon 621 roger.		
08:15:52	NH621 ACC	Ah, Tokyo Control, All Nippon 621, ah request, if possible after Mihara direct Oshima W27 to Kushimoto over. All Nippon 621, unable due to inbound traffic. Roger 621.		
08:16:06	NH621		08:16:21	えーとDMEの45マイル位から、大島の45マイル位から開始し はい。(COP) で、ILS APPROACHでやります。(CAP) はい。(COP) 33 RIGHT (CAP) はい。(COP) 風はちよっと右のCROSS。3017ね、あと何かあるかな。 SPOT 何番。(CAP) (08:16:43) 《 SPOTについての乗員の会話と推定される。》
08:16:44	COP JAL COP JAL COP ACC	Japan Air Tokyo, Japan Air 350. Japan Air 350, Japan Air Tokyo go ahead. ETA 40, Spot お願いします。 Roger, your spot No. five, correction five six 56番です over。 Eh, five six 56番。 Japan Air 350, descend and maintain flight level 250, descend at pilot's discretion over. Roger, Japan Air 350, descend to 250. Call you leaving. Japan Air 350 roger. Eh, Japan Air 350, leaving now 290 for 250. Japan Air 350, roger. Ah, Japan Air 350, disregard. Maintain 290,	08:17:14	ROGER (CAP)
	COP		08:17:27	 《 Leave 290 の訂正に関するCAPの発言と推定される。》

08:17:36 ACC	08:19:08	客席にREVISEをあげたら。(CAP) はい。(COP)	
08:19:03 ACC			
NH16			
08:19:15 ACC	(Interphone)		
08:19:18 ACC	08:19:16	FORWARDの佐藤です。(STW) 《別のSTWの声がかさなる。》 え、COCKPITです。(COP)	
		はい。(STW)	
08:19:28 CAP	08:19:24	え、1度の晴です。(COP) はい了解しました。(STW)	
ACC			
JN3091	(Interphone)		
ACC	08:19:38	はいFORWARDの佐藤です。(STW) ETA40でした。どうも(COP)	
08:19:44 JN3091		もしもし(STW) AFTの橋本です。(STW) えーとねえ、40分到着予定。1度の20、 1度の晴です。(COP) はい了解いたしました。(STW) 了解いたしました。(STW)	
	08:19:49		
08:19:52 ACC			
08:19:57 NH244	08:20:29	Eh, DESCENT CHECK LIST (CAP)	
	08:20:38	BRIEFING FOR LANDING (F/E) COMPLETE (CAP) WINDSHIELD HEAT (F/E) WARM UP (CAP)	

			INSTRUMENT WARNING (F/E) TESTED (CAP) LANDING DATA (F/E) SET & CROSS CHECKED (CAP)	08:20:45	
			RADIO ALTIMETERS (F/E) Eh, SET & CROSS CHECKED (CAP) SET & CROSS CHECKED (COP) Eh, HYD. SYSTEM CHECKED (F/E) PRESSURIZATION SET (F/E) MAIN TANK BOOSTER PUMPS ON (F/E) CIRCUIT BREAKER CHECK (F/E) DESCENT CHECK LIST COMPLETE (F/E)	08:20:56	
				08:21:12	
			は、LEAVING. (CAP)	08:21:32	
				08:22:21	
08:21:35	COP	Eh, Tokyo Control, Japan Air 350 leaving 290 for 160. Japan Air 350 roger.			
08:21:40	ACC				
08:21:51	ACC	All Nippon 621, expect left turn upon reaching flight level 280. Roger 621, now passing 270, we 'll report reaching 280. 621 roger.			
08:22:03	ACC				
08:22:39	ACC	All Nippon 16, contact Tokyo Radar 119.1 over. All Nippon 16 roger. Tokyo Control, All Nippon 621 reaching flight level 280. All Nippon 621 roger, now heading 250 over. 621, fly heading 250.			
	NH16				
	NH621				
	ACC				
	NH621				
			Eh, ONJUKU (CAP)		

08:23:02 ACC	621 affirmative.		
08:25:45 ACC	All Nippon 621, fly heading 250 to join W27 upon reaching own navigation over.		
NH621	Roger 621, how about direct to Kushimoto from present position.		
ACC	621 unable.		
NH621	Roger 621, understood, heading 250 until intercepting W27, then resume own navigation.		
08:26:11 ACC	All Nippon 621, that's affirmative.		
08:26:30 ACC	Japan Air 350, contact Rader on 119.1 over.		
08:26:36 COP	Roger, Japan Air 350, 119.1.	08:26:35	ROGER CONTACT. (CAP)
08:26:40 COP	Tokyo Approach, Japan Air 350 passing 165 for 160, information Echo.		
APP	Japan Air 350, Tokyo Approach, ident, depart Spencer heading 040, vector to final approach course.		
08:26:53 COP	Roger, heading 040, Japan Air 350.	08:26:52	ROGER(CAP)
08:27:05 APP	NH244 16 miles from outer marker, cleared for ILS runway 33 Right approach.		
08:27:10 NH244	244 cleared for ILS approach.		
		08:27:12	
		08:27:13	CHECK(?)
		08:27:21	
08:27:24 COP	Approach, Japan Air 350, after Spencer heading 040 or right now 040?		(Heading 040 はいつの時点かに関するCAPとCOPの会話と推定される。)

08:27:34	APP COP	Japan Air 350, after Spencer 040. Roger, after Spencer 040, Japan Air 350.		
08:27:41	APP	All Nippon 16, turn left heading 020.		
08:27:44	NH16	All Nippon 16, turn left heading 020 roger.		
			08:28:13	Number 2 3 Heading 0 (CAP) 040 (COP)
			08:28:16	040 (CAP) はゝ (COP)
			08:28:44	Spencer, lower altitude. (CAP)
			08:28:45	はゝ (COP)
08:28:47	COP	Approach, Japan Air 350, maintain 160, heading 040, request low.		
	APP	Japan Air 350, descend and maintain 3,000.		
08:28:56	COP	Roger 350, descend to 3,000, leaving 160.	08:28:56	ROGER (CAP)
			08:29:06	ILS (CAP) はゝ (COP)
			08:29:26	はゝ KISARAZU (COP)
08:29:28	APP	All Nippon 16, turn left heading 360, descend and maintain 3,000.		
08:29:34	NH16	Heading 360, descending 3,000 All Nippon 16 roger.		
08:30:37	APP	All Nippon 16, 17 miles from outer marker, turn left heading 360, cleared for ILS runway 33 Right approach.		
08:30:44	NH16	All Nippon 16, cleared ILS runway 33 Right		

08:30:58	APP	approach roger.		
08:31:01	NH244	All Nippon 244 over the outer marker, contact Tower 118. 1. 244 roger.		
			08:31:55	(Interphone) はい、川井です。(STW) COCKPIT, 10,000フィートです。(F/E) はい、了解しました。(STW) AFT 橋本です。(STW) はい10,000フィートだそうです。(STW) はい、有難うございました。(STW)
08:32:39	APP	Japan Air 350, turn left heading 360 and desce, maintain 3000.	08:32:45	ROGER (CAP)
08:32:46	COP	Heading 360, 3,000 Japan Air 350.		
08:33:18	JGV1714	Ah, Tokyo Approach, Juliett Golf Victor 1714 over.		
	APP	Juliett Golf Victor 1714, Tokyo Approach, radar contact, ah maintain 2,000 after reaching 2,000 turn right to Kisarazu, then direct to Yokosuka, maintain 2,000 until further advised. QNH 3017.		
	JGV1714	Roger 1714, Ah, climb to 2,000 until 2,000 right turn to Kisarazu direct Yokosuka, maintain 2,000 until further advised.		
	APP	Juliett Golf Victor 1714, say altitude.		
08:34:00	JGV1714	Ah, 1714 passing 900 over.		
	APP	Roger.		
08:33:48	ATIS	LANDING RUNWAY 33 RIGHT ILS		

		APPROACH, DEPARTURE RUNWAY 04 AND 33 RIGHT, INFORM TOKYO APPROACH OR TOKYO GROUND ON INITIAL CONTACT THAT YOU HAVE RECEIVED INFORMATION FOXTROT. THIS IS TOKYO INTERNATIONAL AIRPORT, INFORMATION FOXTROT, MET REPORT TOKYO 2330, WIND 360 DEGREES 15 KNOTS, VISIBILITY 25 KILOMETERS 1 OKTAS 5000 FEET, TEMPERATURE 2. DEW POINT MINUS 9, QNH 3017 INCHES, LANDING RUNWAY 33 RIGHT ILS APPROACH, DEPARTURE RUNWAY 04 AND 33 RIGHT, INFORM TOKYO APPROACH OR TOKYO GROUND ON INITIAL CONTACT THAT YOU HAVE RECEIVED INFORMATION FOXTROT. THIS IS TOKYO INTERNATIONAL AIRPORT, INFORMATION FOXTROT, MET REPORT TOKYO 23. (08:34:54) Japan Air 350, 16 miles from outer marker, cleared for ILS runway 33 Right approach. Roger, Japan Air 350, cleared for ILS runway 33 Right All Nippon 16 contact Tower 118. I. All Nippon 16 roger.	08:33:59 08:34:10	APPROACH CHECK LIST (CAP) はゝ。 (F/E) はゝ CABIN SIGN (F/E) ON (COP) ALTIMETER (F/E) 3017 SET & CROSS CHECK (CAP, COP, F/E)	
08:34:35 APP			08:34:18	OVERRIDE (COP)	
08:34:41 COP			08:34:37	ENGINE ANTI-ICE OFF (CAP) はゝ。 (F/E) CLEARED FOR ILS (COP)	
08:34:49 APP			08:34:48	FUEL SYSTEM SET FOR LANDING (F/E) COCKPIT DOOR UNLOCKED (F/E) NAV INSTRUMENTS (F/E)	
08:34:53 NH16			08:34:55	SET AND CROSS CHECKED (CAP, COP) APPROACH COMPLETED (F/E)	

08:35:41	APP	Japan Air 350, traffic 1 o'clock, 10 miles, move to, making turn to Kisarazu at 2,000, helicopter.		
08:35:53	COP	350 looking		
08:36:16	APP	Juliett Golf Victor 1714, request Yokosuka estimate.		
08:36:22	JGV1714	Ah, 1714 stand-by.	08:36:27	ALTITUDE HOLD ON (CAP)
			08:36:30	FLAP 15 SET (CAP) FLAP 15 (COP)
08:36:42	APP	Japan Air 350, traffic 10 o'clock 8 miles, move to East, helicopter, 2,000.	08:36:36	《速度が少し多いとのCOPの発言と推定される。》 あ、そうか、悪い悪い。(CAP)
	JGV1714	Ah, Tokyo Radar 1714 estimating Yokosuka 52 over.		
08:36:57	APP	1714 roger 52.	08:36:56	15 SET (COP)
			08:37:00	Eh, 25 SET (CAP)
08:37:14	APP	Japan Air 350, do you have ah helicopter in sight.	08:37:01	25 (COP)
	COP	350, negative.		
08:37:20	APP	Negative.		
08:37:34	APP	Japan Air 350, previous traffic 1 o'clock 3 miles, ah south-west bound at 2,000.		
	COP	Ah, 350 negative in sight.		
08:37:50	APP	Roger.		
08:37:55	APP	Juliett Golf Victor 1714, traffic on your left 3 miles making ILS approach and 2 miles	08:37:52	あつちだ、あつちだ、あの海岸線の上です。 きれてるところ。(F/E)
			08:37:56	はい IN SIGHT. (CAP)

08:38:12	JGV1714 APP COP APP	to Kisarazu at 3,000. Ah 1714 in sight. Roger. Approach, Japan Air 350 traffic in sight. Japan Air 350 roger. He has you in sight.	08:38:32 08:38:48	GEAR DOWN (CAP) GEAR DOWN (COP) THREE GREEN (COP)
08:38:50 08:38:56	APP COP APP	Japan Air 350, contact Tower 118. 1. Roger 350, good-day. Good day.	08:38:59	FLAP 35 (CAP) はゝ。 (COP) NOISE ABATEMENT でやろう。 (CAP) はゝ。 (COP) SPOILER ARM (CAP) SPOILER ARM (COP)
08:39:05	TWR NH81 TWR NH81	All Nippon 81 Tower, how do you read ? Ah 81 ready for take-off. Roger, taxi into position and hold runway 33 Right. Roger, into position and hold on 33 Right.	08:39:03	
08:39:15 08:39:24	COP TWR COP	Tokyo Tower, Japan Air 350 outer marker. Japan Air 350, Tokyo Tower, runway 33 Right, wind 360 at 15, continue approach. 350, continue approach.		

08:39:34	TWR	All Nippon 16, turn left on C5, contact Ground 121. 7. Roger.	08:39:26 08:39:31	Continue approach. (COP) Eh, LANDING, SPOILER ARM (CAP) SPOILER ARM (COP, F/E) LANDING CHECK LIST (CAP) LANDING GEAR (F/E) DOWN & 3 GREEN. PRESSURE QUANTITY (CAP, COP, F/E) ANTI-SKID & BRAKE PRESSURE (F/E) ARMED & CHECKED (COP) SPOILER & PRESSURE (F/E) ARMED (CAP, COP) PRESSURE CHECKED (F/E) CONTINUOUS IGNITION (F/E) ALL ENGINE (CAP, COP) FINAL FLAP STAND-BY. AUTOPILOT STAND-BY. STAND-BY FINAL FLAP, AUTOPILOT (F/E) はい。(CAP)
08:39:59	TWR	All Nippon 81, wind 350 at 18, cleared for take-off, runway 33 Right.	08:39:49	
08:40:04	NH81	Roger 81, cleared for take-off 33 Right.		
08:40:19	JL503 JAL	Japan Air Tokyo, Japan Air 503.		
	JL503	Japan Air 503, Tokyo go ahead.		
	JAL	Block at 20, diagonal 33 以上です。		
08:40:35	JL503	Roger copied OK, have a nice flight. はい、どうも。		
08:40:54	TWR NH171 TWR	All Nippon 171 Tower, how do you read ? 171 ready for take-off. Roger, taxi into position and hold runway 33	08:40:51 08:40:52	FLAP 35 CONTROL (CAP) 35 (COP)

08:41:02	NH171	Right. 171, taxi into position and hold.	08:41:01	FINAL FLAP CONTROL (CAP) FULL FLAPですか。(COP) はい。(CAP) はい。え。(CAP) STAND-BY AUTOPILOT (F/E) はい。(CAP)
08:41:18	TWR	All Nippon 81, contact Departure.	08:41:11	
08:41:21	NH81	Roger 81.		
08:41:58	TWR	All Nippon 171, wind 360 at 15, cleared for take-off runway 33 Right.		
08:42:03	NH171	Roger 171, cleared for take-off 33 Right.	08:42:27	1,000 (COP) RAW DATA (CAP) NO FLAG (F/E)
08:42:37	TWR	Japan Air 350, wind 360 at 20, cleared to land, runway 33 Right.		
08:42:42	COP	Roger 350, cleared to land, runway 33 Right.		
08:42:48	TWR	All Nippon 171 contact Departure.	08:42:49	Clear to land. (COP) はい。(CAP)
	NH171	Roger, switch to Departure.	08:43:25	500 (COP)
			08:43:50	APPROACHING MINIMUM (COP) CHECK (CAP) 《Middle Marker 通過音》 《Radio Altimeter の Decision Height Warning の音》 200 (F/E) MINIMUM (COP)

CHECK (CAP)

We are low. (F/E) 又は、Power low. (F/E)

GLIDE SLOPE, GLIDE SL (GPWS)

CAPTAIN やめて下さい。(COP) 《上のGPWSに重なって聞える。》

《衝撃音》 (08:44:07)

ランウェイ 33 R

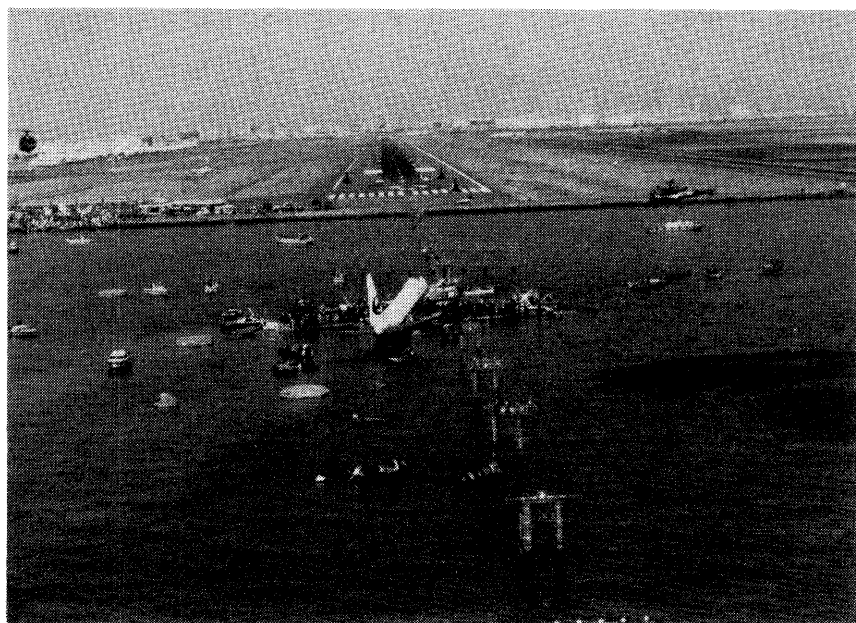


写真1 墜落現場

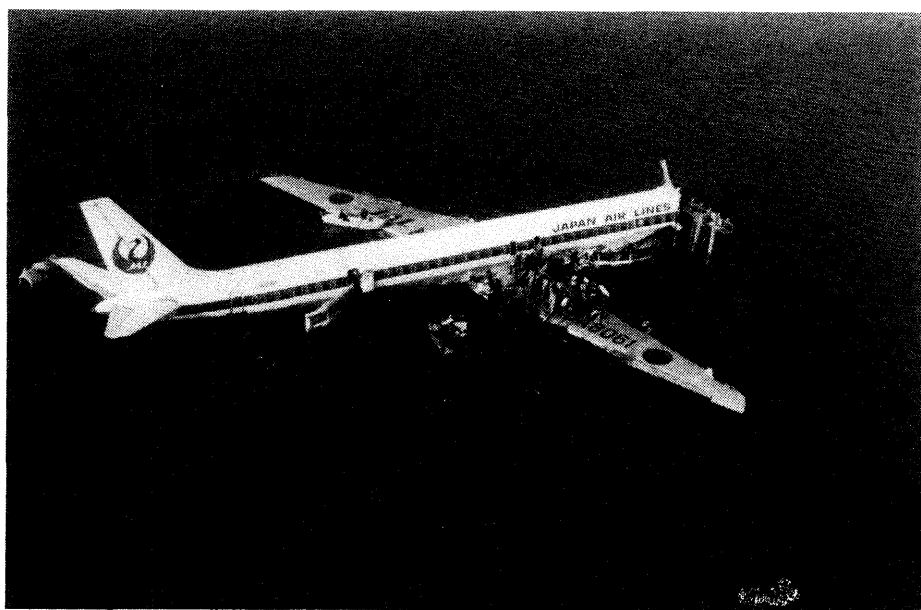
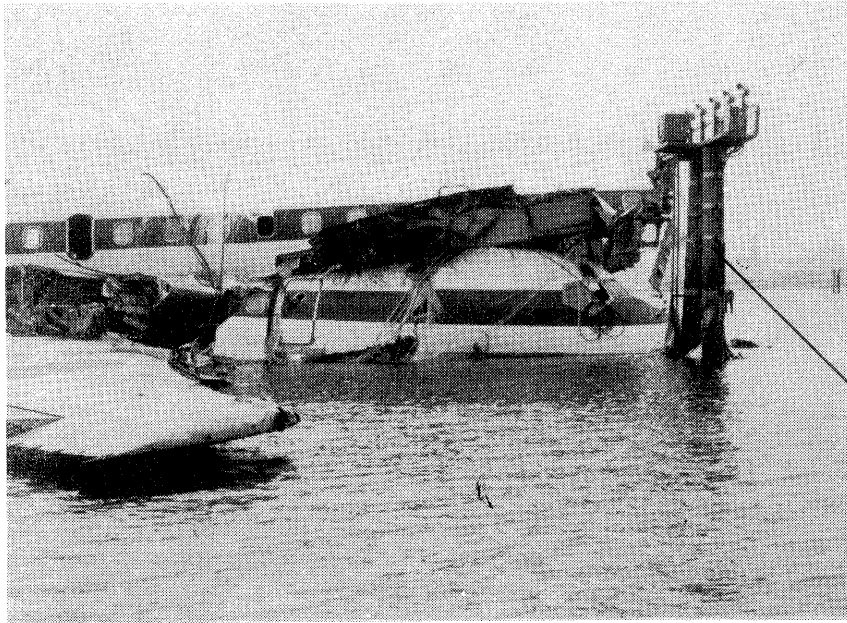


写真2 残がい



第19番進入灯

写真3 残がい

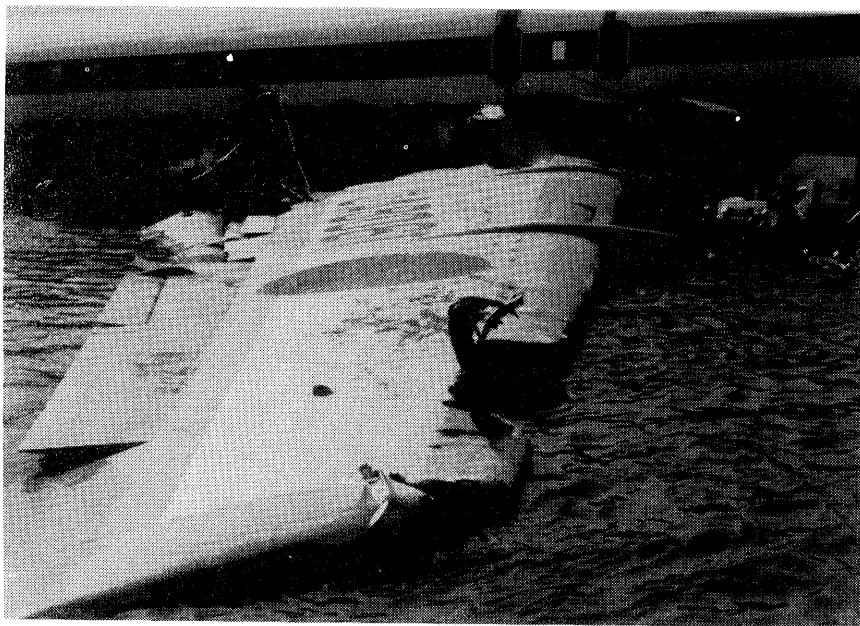


写真4 右主翼の損壊状況



写真 5 右主翼翼端前縁部の損壊状況

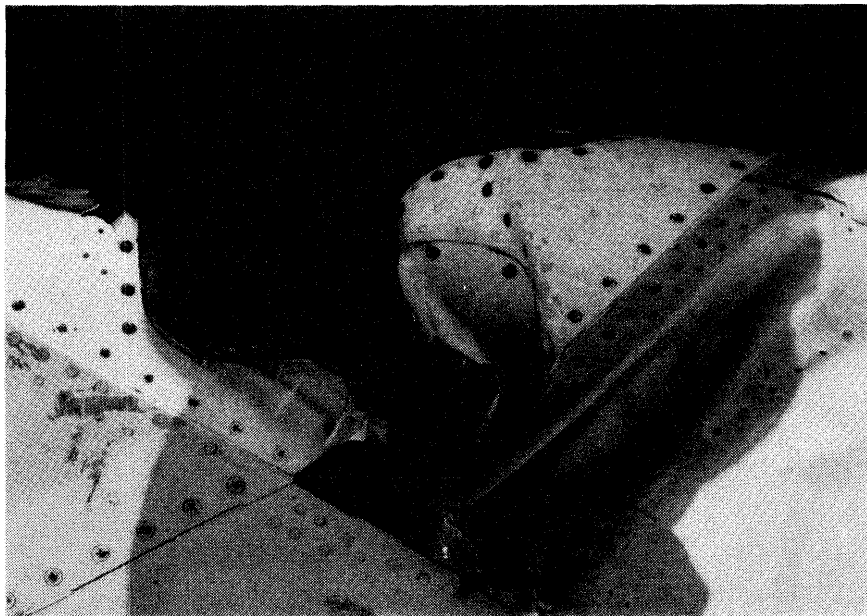


写真 6 右主翼翼端部の損壊状況

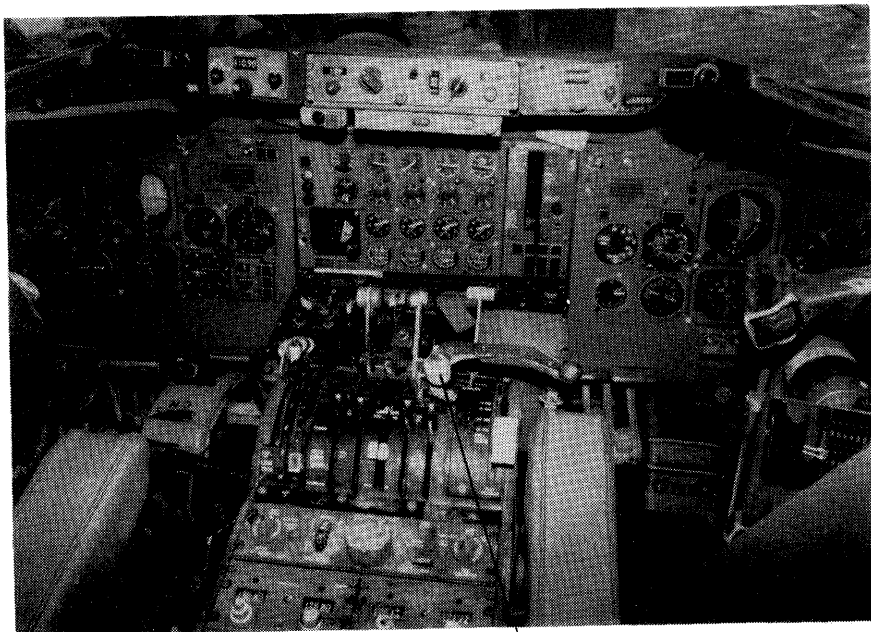


写真7 操縦室内部

第4エンジン・リバース・レバー
が右側へ約90度湾曲している。

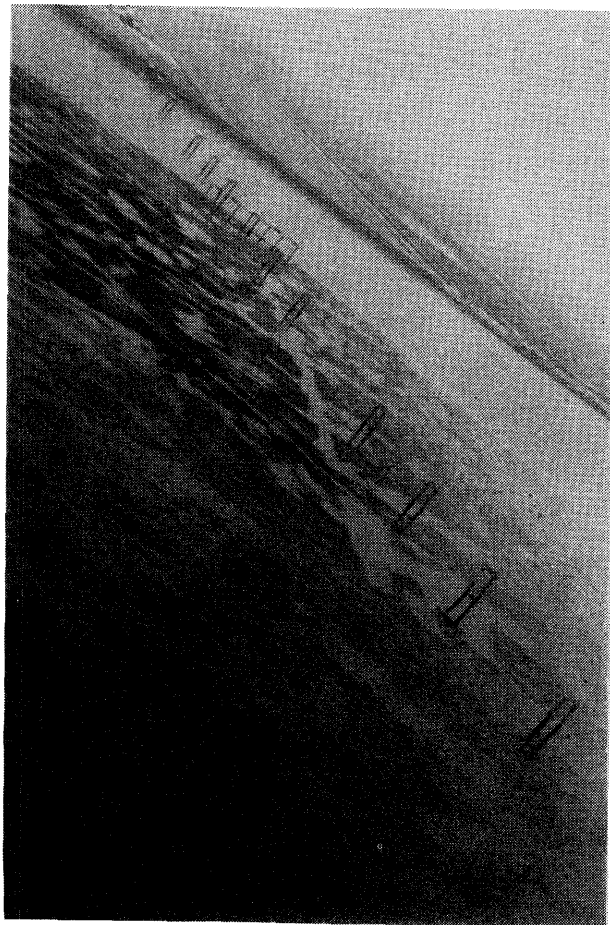


写真 8 事故現場の海底痕跡

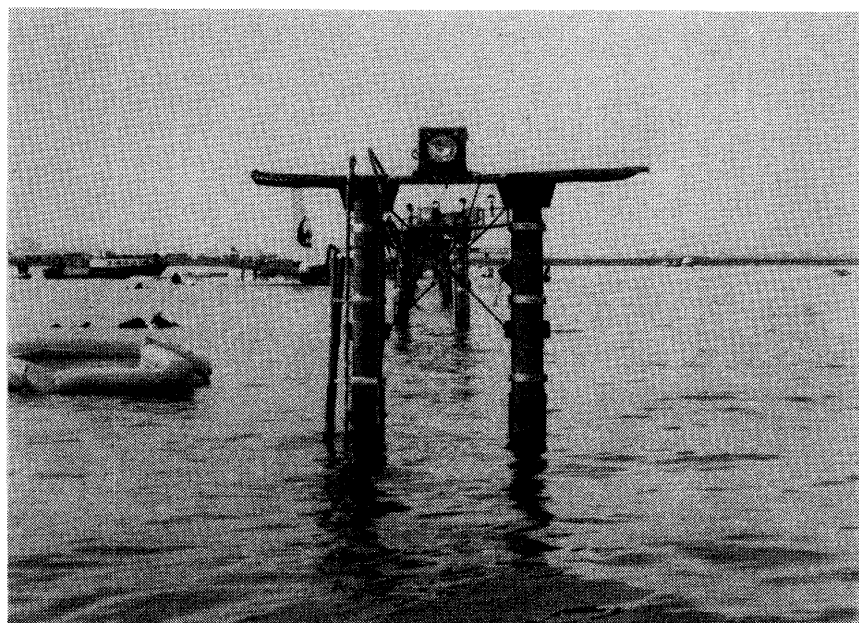


写真 9 第 1 4 番進入灯損壊状況（正面）



写真 1 0 第 1 4 番進入灯損壊状況（側面）

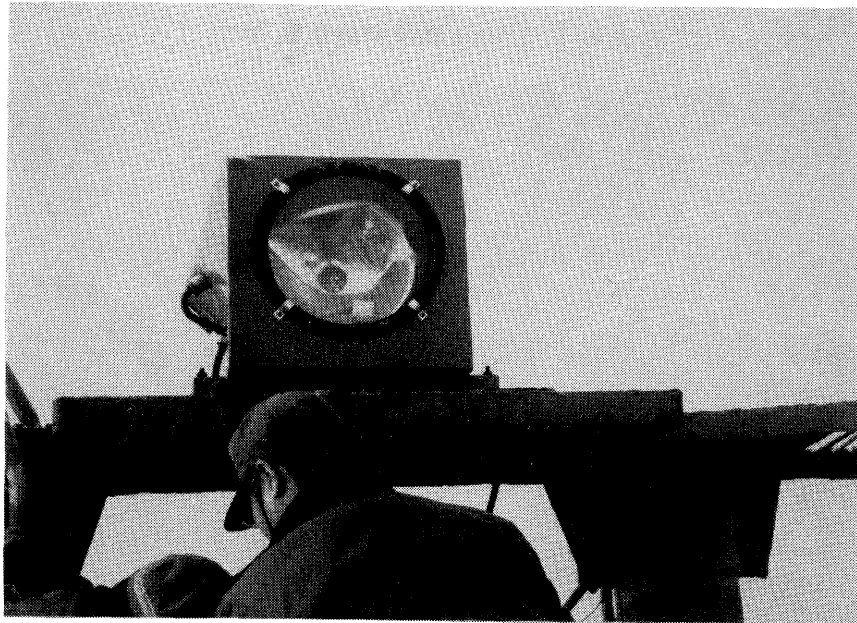


写真 1 1 第 1 4 番進入灯損壊状況（閃光灯器）

折損部分

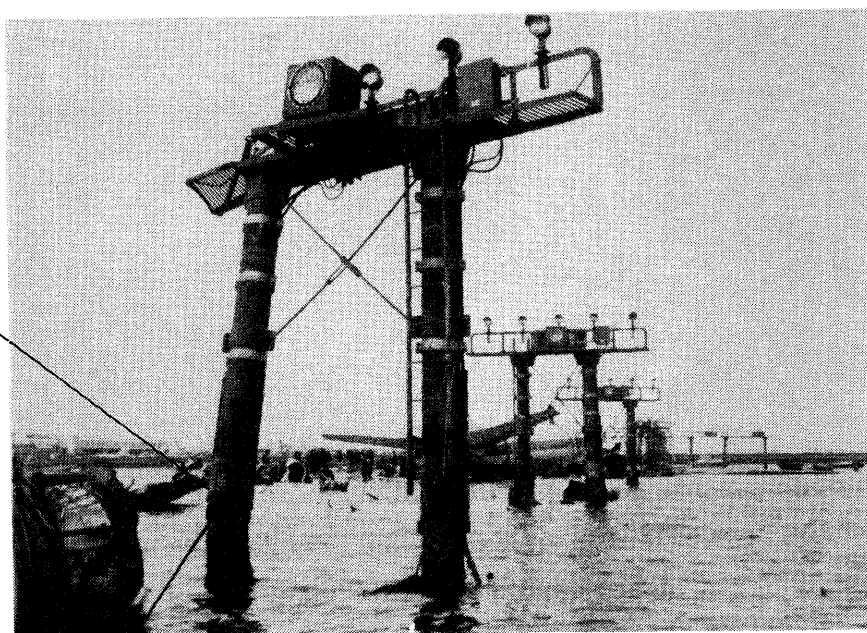


写真 1 2 第 1 5 番進入灯損壊状況

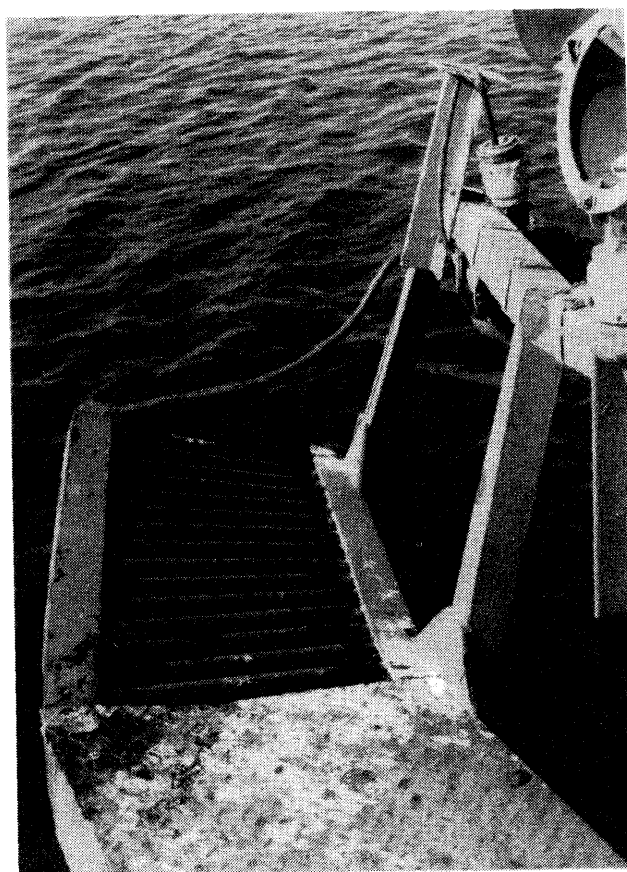


写真 1 3 第 1 5 番進入灯損壊状況（架台）

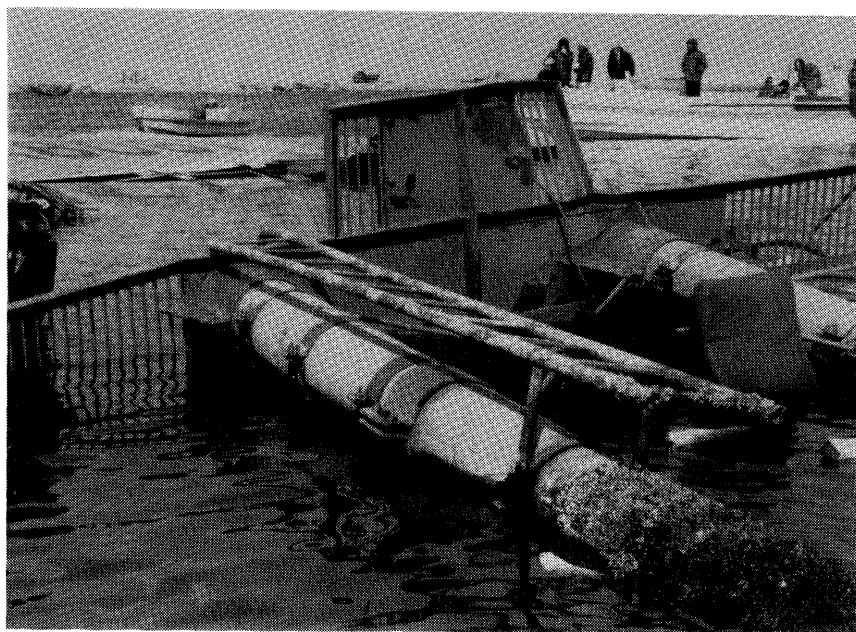


写真 1 4 第 1 8 番進入灯損壊状況

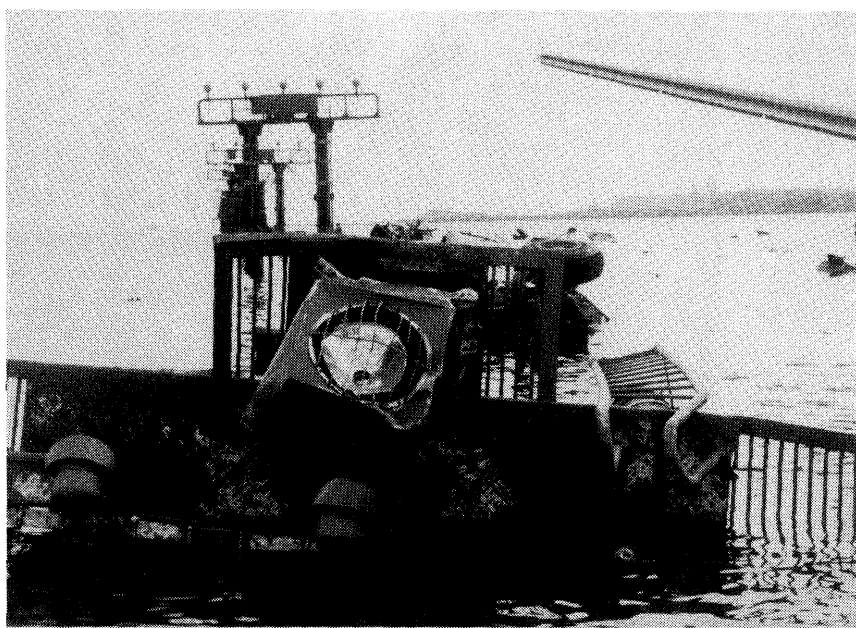


写真 1 5 第 1 8 番進入灯損壊状況（閃光灯器、架台）

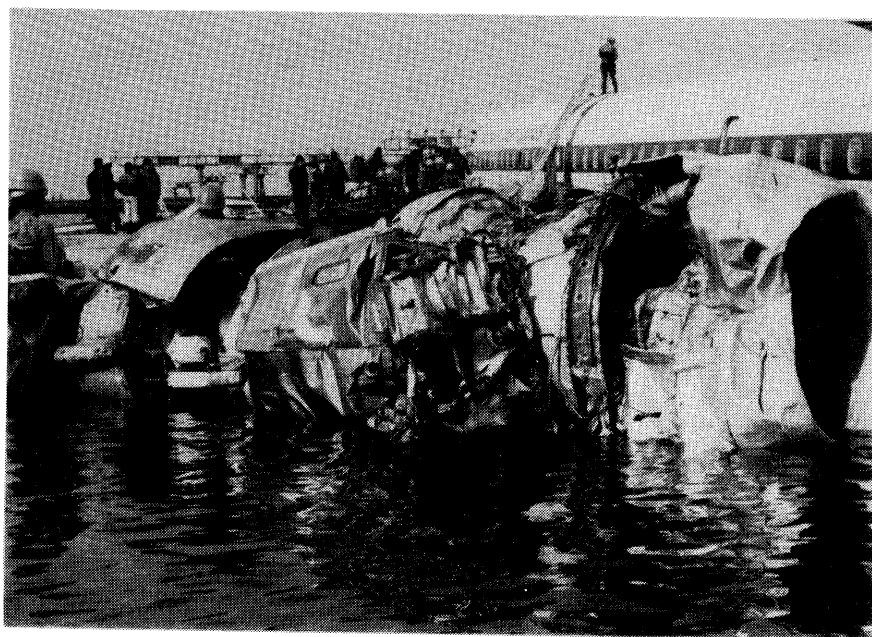


写真16 第1エンジン



写真17 第2エンジン



写真 1 8 第 3 エンジン

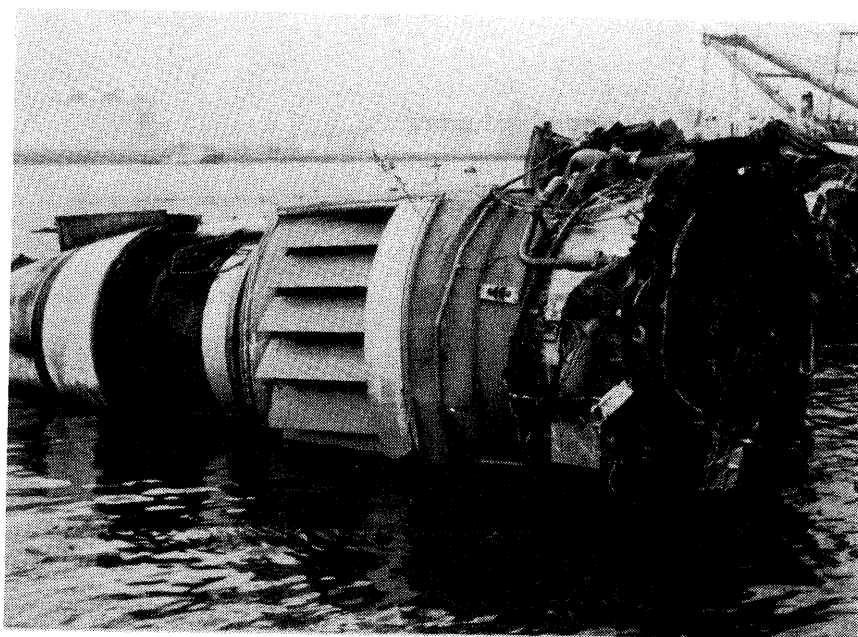
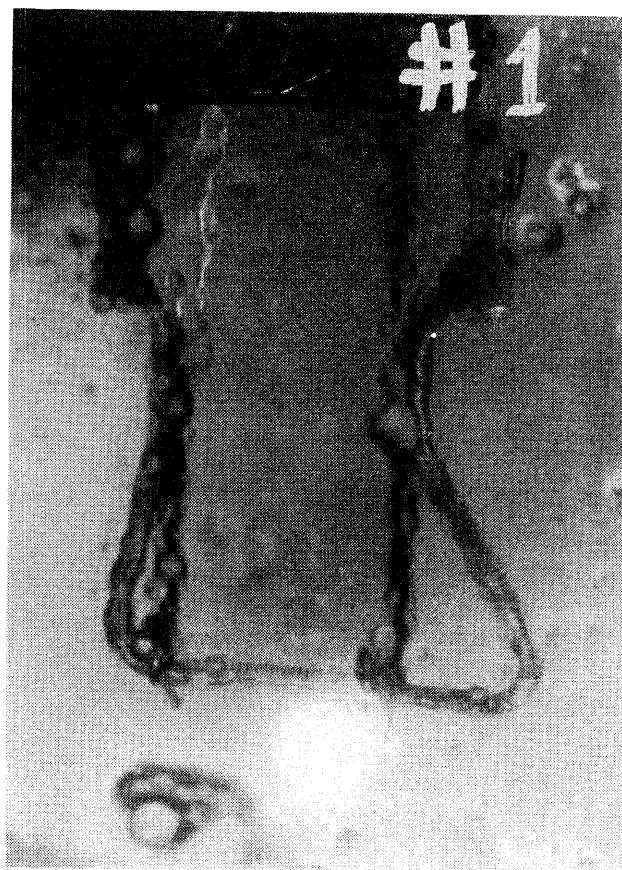


写真 1 9 第 4 エンジン

写真 2 0



第1エンジン・スラスト・リバーサ
ドアー・オープン指示灯

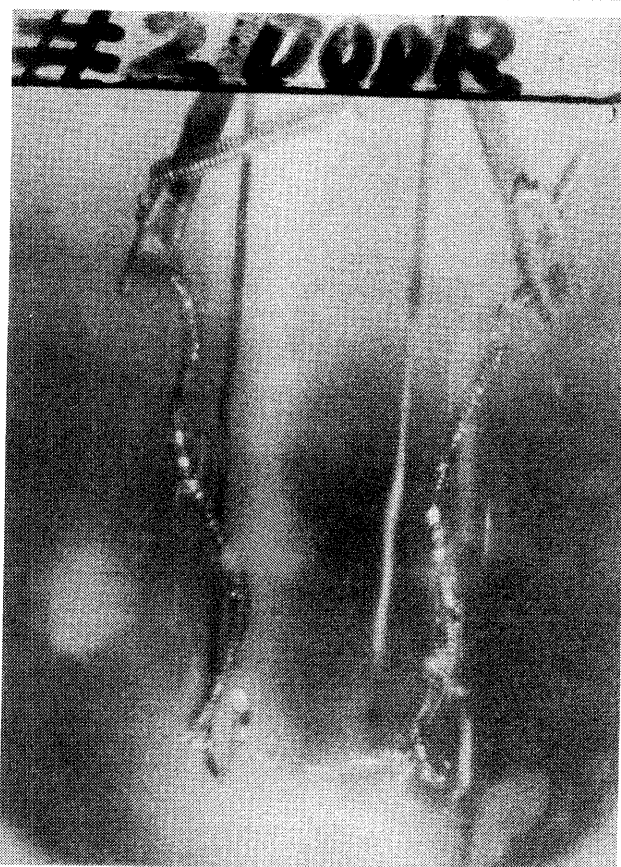
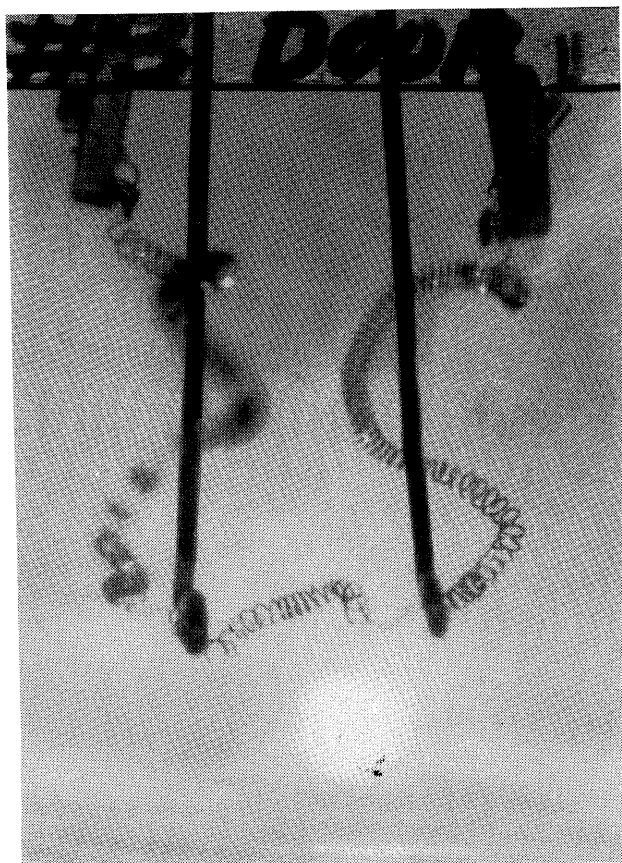


写真 2 1

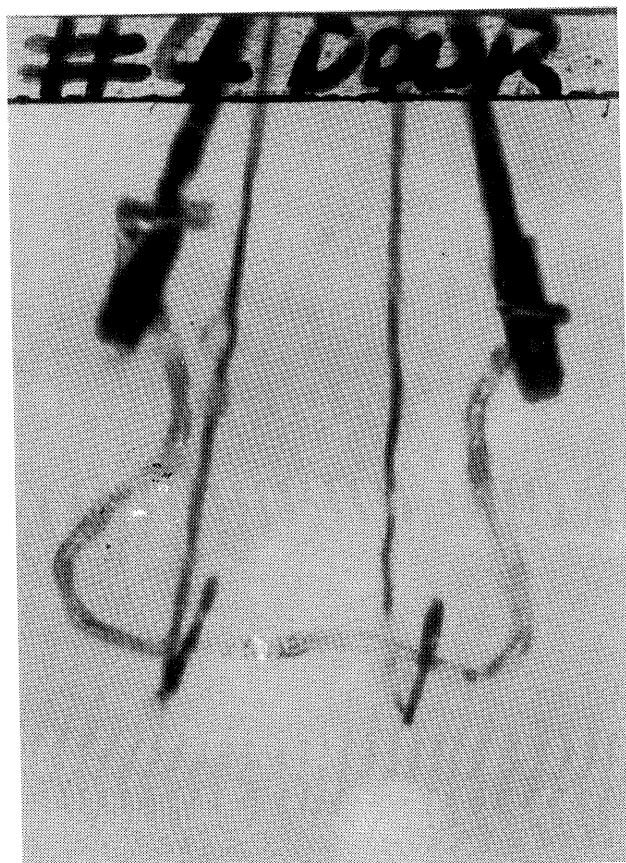
第2エンジン・スラスト・リバーサ
ドアー・オープン指示灯

写真 2 2



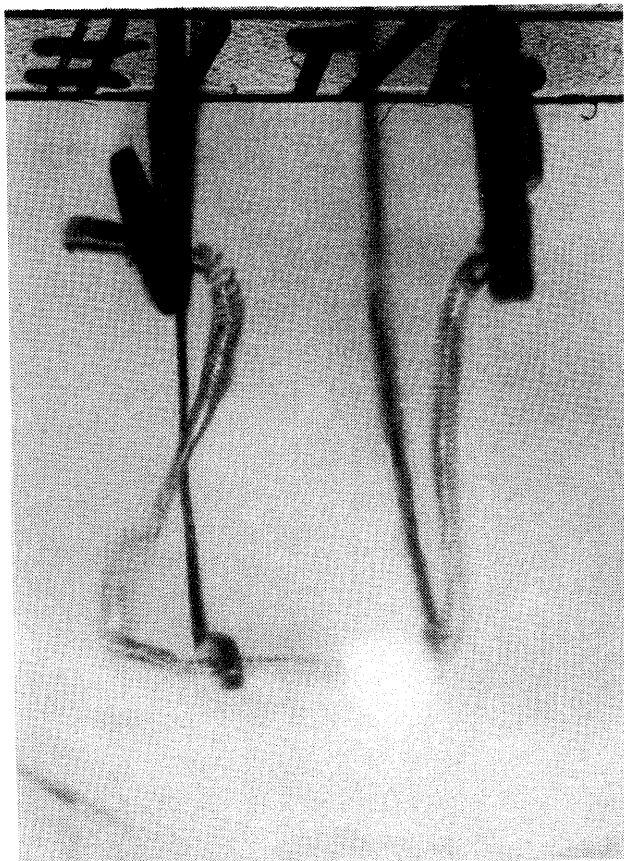
第3エンジン・スラスト・リバーサ
ドアー・オープン指示灯

写真 2 3



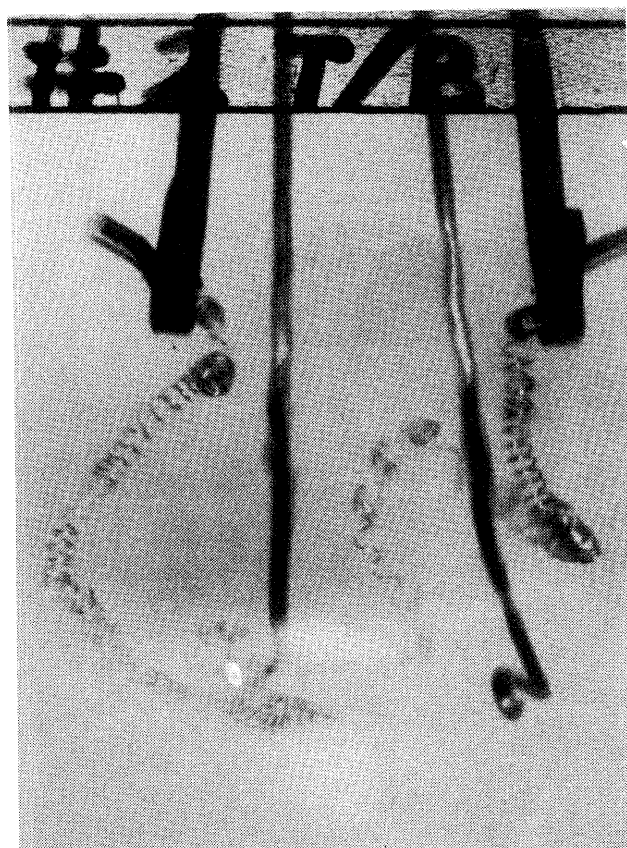
第4エンジン・スラスト・リバーサ
ドアー・オープン指示灯

写真 2 4.



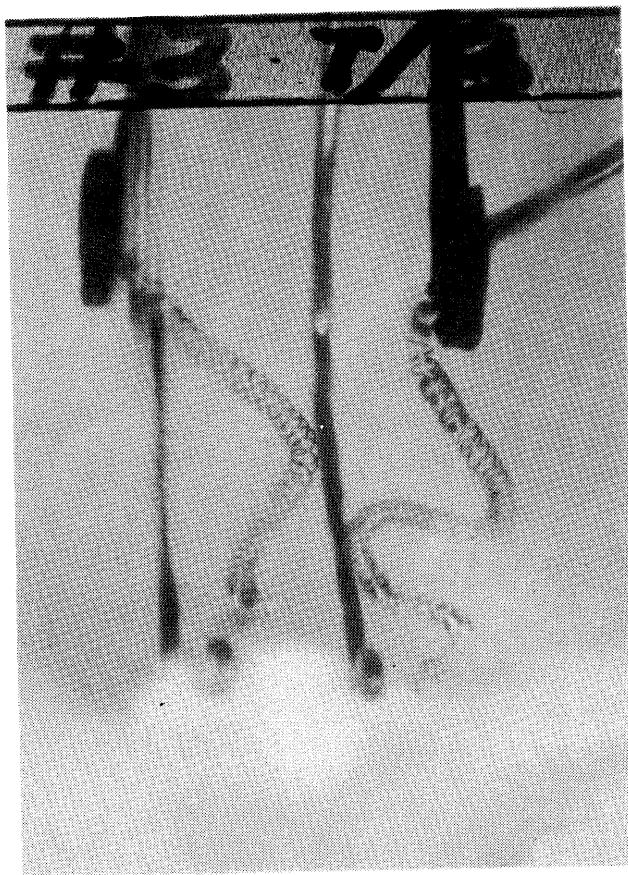
第1エンジン・スラスト・ブレーキ指示灯

写真 2 5



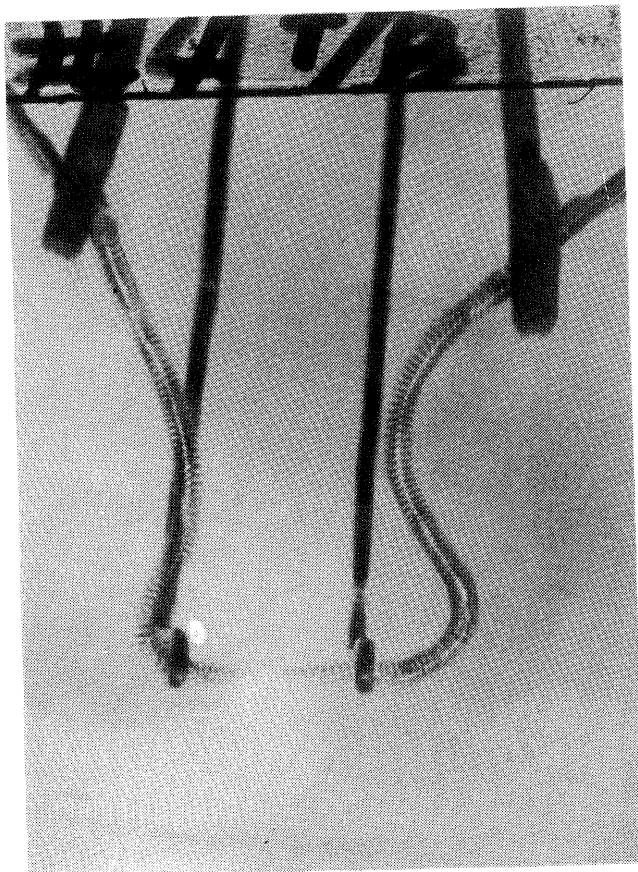
第2エンジン・スラスト・ブレーキ指示灯

写真 2 6



第3 エンジン・スラスト・リバーサ
スラスト・ブレーキ指示灯

写真 2 7



第4 エンジン・スラスト・リバーサ
スラスト・ブレーキ指示灯