

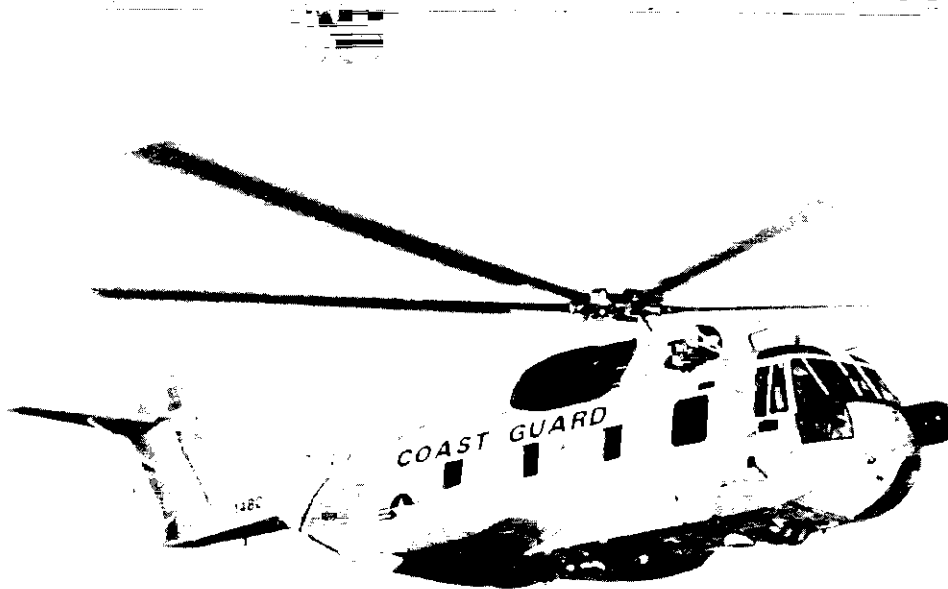
T.O. 1H-3(H)F-1

FLIGHT MANUAL

U.S. COAST GUARD

MODEL HH-3F HELICOPTERS

**N00019-70-C-0564
DOT-CG-60,353A**



CHANGE
NOTICE

**LATEST CHANGED PAGES SUPERSEDE
THE SAME PAGES OF PREVIOUS DATE**

Insert changed pages into basic
publication. Destroy superseded pages.

**PUBLISHED BY DIRECTION OF
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Total number of pages in this manual is 382 consisting of the following:

Page No.	#Change	Page No.	#Change	Page No.	#Change
Title	2	1-26A Added	1	2-17	2
A - B	2	1-26B Blank Added	1	2-18	1
C Blank	2	1-27	1	2-19 - 2-20	0
Letter of Promulgation	0	1-28	0	2-21	2
Blank	0	1-29	2	2-22	1
Certification-1	0	1-30	1	2-23 - 2-24	0
Certification-2 Blank	0	1-31 - 1-32	2	2-24A Added	2
Flyleaf-1 - Flyleaf-3	2	1-33 - 1-34	1	2-24B Blank Added	2
Flyleaf-4 Blank	2	1-34A Added	1	2-25	2
i	0	1-34B	2	2-26 - 2-27	1
ii	2	1-34C Added	2	2-28	2
iii	1	1-34D Blank Added	2	2-29	1
iv	0	1-35	2	2-30	2
1-1 - 1-4	0	1-36	0	2-31	0
1-5	1	1-37	1	2-32 - 2-36	2
1-6	0	1-38	0	2-36A	2
1-7	1	1-39	1	2-36B - 2-36E Added	2
1-8 - 1-10	0	1-40 - 1-42	0	2-36F Blank Added	2
1-11 - 1-12	1	2-1 - 2-2	2	2-37	2
1-13 - 1-14	0	2-3 - 2-4	1	2-38	1
1-15 - 1-16	1	2-5 - 2-7	2	2-39	0
1-16A	2	2-8	1	2-40 - 2-41	1
1-16B Blank	2	2-8A Added	1	2-42	0
1-17	0	2-8B Blank Added	1	2-42A - 2-42B Added	2
1-18	2	2-9	1	2-43	2
1-19	0	2-10	0	2-44 - 2-46	0
1-20	1	2-11 - 2-12	1	2-47	1
1-20A	2	2-13	2	2-48 - 2-50	2
1-20B Blank	2	2-14	1	2-50A Added	2
1-21 - 1-22	1	2-15	0	2-50B Blank Added	2
1-23 - 1-24	0	2-16	2	2-51 - 2-52 Added	1
1-25	2	2-16A	2	3-1 - 3-32	2
1-26	1	2-16B Blank	2	3-33 Added	2

Zero in this column indicates an original page.

CAUTION

Without the stability and control afforded by the rotating blades, the helicopter cannot right itself from a roll greater than approximately 13 degrees.

Anchoring the Helicopter

The anchor line should be at least three to four times the depth of the water in normal conditions, and as much as six or seven times the depth in rough or windy conditions. This provides for an essentially horizontal pull from which it develops its holding power. Under extreme conditions, a ten to twenty pound weight may be attached to the anchor line. In most instances, the 150-foot line is fastened to the eye of the anchor line with the attached snap ring. The entire length is then paid out after the anchor is lowered to the bottom. It is essential that the configuration shown in figure 2-14 be maintained, since a low centerline attachment ensures that the helicopter will align with the wind and waves to present minimum drag and resultant minimum strain on the anchor line. In emergency conditions on water too deep to anchor in, a sea anchor should be deployed. If a drogue is not available, a parachute or other object may be used to hold the helicopter into the wind and waves. This will minimize drift and roll as much as possible.

CAUTION

In no case should the anchor line be shortened or the prescribed configuration altered by attaching the anchor line to any of the internal tiedown rings in the cabin. The increased drag caused by the asymmetrical attachment and the resultant position broadside to the wind and waves can cause the anchor to drag or possibly could capsize the helicopter.

WEIGHING ANCHOR

Using the light nylon line provided, pull the anchor line to the cargo door and retrieve the anchor.

Beaching

It is recommended that the helicopter be flown from the water to the landing area and not beached by taxiing from water onto land.

Water Rescue Procedures

The equipment required for a rescue platform recovery or hoist should be rigged before beginning the approach or when established in a stable hover. If possible, the crewmen should be seated with seat belts and harnesses fastened and seats facing forward during the approach to a hover. At the direction of the pilot the crewman will complete the Rescue Checklist.

The Rescue Checklist consists of:

1. Aircrewman's rescue harness on and adjusted.
2. Check rescue rig (basket, sling, platform) for condition and rigging.
3. Check hot mike; request hoist power.
4. Roll and pitch bias centered.
5. Request permission to open up.
6. Rig rescue gear.
7. Report ready to pilot.
8. Conduct crew briefing.

CAUTION

Operation of the hoist at airspeeds above 80 KIAS will result in possible airframe/hoist damage.

Hoisting Procedures**GENERAL**

Most SAR hoists will be made from a boat or a ship. Although the procedures below cover this type of hoist, they are adaptable to land and water hoists. The pilot will brief the crew after evaluating the situation and prior to commencing the hoist. The quality of this briefing will determine how efficient and safe the hoist will be.

To make a successful rescue by hoisting requires close coordination and cooperation between the pilots and the crew. The use of standard rescue procedures will improve crew coordination by ensuring that pilots and crewmembers are using proven procedures and voice reports to make a rescue.

WIND AND SEA SCALE FOR FULLY ARISEN SEA														
SEA-GENERAL			WIND 3)			SEA 3)								
SEA STATE 1)	DESCRIPTION 2)	(BEAUFORT) WIND FORCE	DESCRIPTION	RANGE (KNOTS)	WIND VELOCITY (KNOTS)		WAVE HEIGHT FEET		SIGNIFICANT PERIODS (SECONDS)	T _{max} PERIOD OF MAXIMUM ENERGY OF SPECTRUM	T _z (AVERAGE PERIOD)	L (AVERAGE WAVE LENGTH) (NAUTICAL MILES)	MINIMUM FETCH (NAUTICAL MILES)	MINIMUM DURATION (HOURS)
					AVERAGE	1/10 HIGHEST	AVERAGE	1/10 HIGHEST						
0	Sea like a mirror.		Calm	Less than 1	a) 0	0	0	0	—	—	—	—	—	
	Ripples with the appearance of scales are formed, but without foam crests.	1	Light Airs	1-3	2	0.05	0.08	0.10	up to 1.2 sec	0.7	0.5	10 in.	5	18 min
1	Small wavelets, still short but more pronounced; crests have a glossy appearance, but do not break.	2	Light Breeze	4-6	5	0.18	0.29	0.37	0.4-2.8	2.0	1.4	6.7 ft	8	39 min
	Large wavelets, crests begin to break. Foam of glossy appearance. Perhaps scattered white horses.	3	Gentle Breeze	7-10	8.5	0.6	1.0	1.2	0.8-5.0	3.4	2.4	20	9.8	1.7 hrs
2	Small waves, becoming larger; fairly frequent white horses.	4	Moderate Breeze	11-16	10	0.88	1.4	1.8	1.0-6.0	4	2.9	27	10	2.4
					12	1.4	2.2	2.8	1.0-7.0	4.8	3.4	40	18	3.8
					13.5	1.8	2.9	3.7	1.4-7.6	5.4	3.9	52	24	4.8
					14	2.0	3.3	4.2	1.5-7.8	5.6	4.0	59	28	5.2
3	Moderate waves, taking a more pronounced long foam; many white horses are formed. (Chance of some spray).	5	Fresh Breeze	17-21	16	2.9	4.6	5.8	2.0-8.8	6.5	4.6	71	38	6.6
					18	3.8	6.1	7.8	2.5-10.0	7.2	5.1	90	55	8.3
					19	4.3	6.9	8.7	2.8-10.6	7.7	5.4	99	65	9.2
					20	5.0	8.0	10	3.0-11.1	8.1	5.7	111	75	10
4	Large waves begin to form; the white foam crests are more extensive everywhere. (Probably some spray).	6	Strong Breeze	22-27	22	6.4	10	13	3.4-12.2	8.9	6.3	134	100	12
					24	7.9	12	16	3.7-13.5	9.7	6.8	160	130	14
					24.5	8.2	13	17	3.8-13.6	9.9	7.0	164	140	15
					26	9.6	15	20	4.0-14.5	10.5	7.4	188	180	17
5	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind. (Spindrift begins to be seen).	7	Moderate Gale	28-33	28	11	18	23	4.5-15.5	11.3	7.9	212	230	20
					30	14	22	28	4.7-16.7	12.1	8.6	250	280	23
					30.5	14	23	29	4.8-17.0	12.4	8.7	258	290	24
					32	16	26	33	5.0-17.5	12.9	9.1	285	340	27
6	Moderately high waves of greater length; edges of crests break into spindrift. The foam is blown in well marked streaks along the direction of the wind. Spray affects visibility.	8	Fresh Gale	34-40	34	19	30	38	5.5-18.5	13.6	9.7	322	420	30
					36	21	35	44	5.8-19.7	14.5	10.3	363	500	34
					37	23	37	46.7	6-20.5	14.9	10.5	376	530	37
					38	25	40	50	6.2-20.8	15.4	10.7	392	600	38
7	High waves. Dense streaks of foam along the direction of the wind. Sea begins to roll. Visibility affected.	9	Strong Gale	41-47	40	26	45	58	6.5-21.7	16.1	11.4	444	710	42
					42	31	50	64	7-23	17.0	12.0	492	830	47
					44	36	58	73	7-24.2	17.7	12.5	534	960	52
					46	40	64	81	7-25	18.6	13.1	590	1110	57
8	Very high waves with long overhanging crests. The resulting foam is in great patches and is blown in dense white streaks along the direction of the wind. On the whole the surface of the sea takes a white appearance. The rolling of the sea becomes heavy and shock-like. Visibility is affected.	10	Whole Gale*	48-55	48	44	71	90	7.5-26	19.4	13.8	650	1250	63
					50	49	78	99	7.5-27	20.2	14.3	700	1420	69
					51.5	52	83	106	8-28.2	20.8	14.7	736	1560	73
					52	54	87	110	8-28.5	21.0	14.8	750	1610	75
	Exceptionally high waves (Small and medium-sized ships might for a long time be lost to view behind the waves.) The sea is completely covered with long white patches of foam lying along the direction of the wind. Everywhere the edges of the wave crests are blown into froth. Visibility affected.	11	Storm*	56-63	54	59	95	121	8-29.5	21.8	15.4	810	1800	81
					56	64	103	130	8.5-31	22.6	16.3	910	2100	88
					59.5	73	116	148	10-32	24	17.0	985	2500	101
	Air filled with foam and spray. Sea completely white with driving spray; visibility very seriously affected.	12	Hurricane*	64-71	> 64	> 80 ^{b)}	> 128 ^{b)}	> 164 ^{b)}	10-(35)	(26)	(18)	~	~	~

* For hurricane winds (and often whole gale and storm winds) required durations and fetches are rarely attained. Seas are therefore not fully arisen.

a) A heavy box around this value means that the values tabulated are at the center of the Beaufort range.

b) For such high winds, the seas are confused. The wave crests blow off, and the water and the air mix.

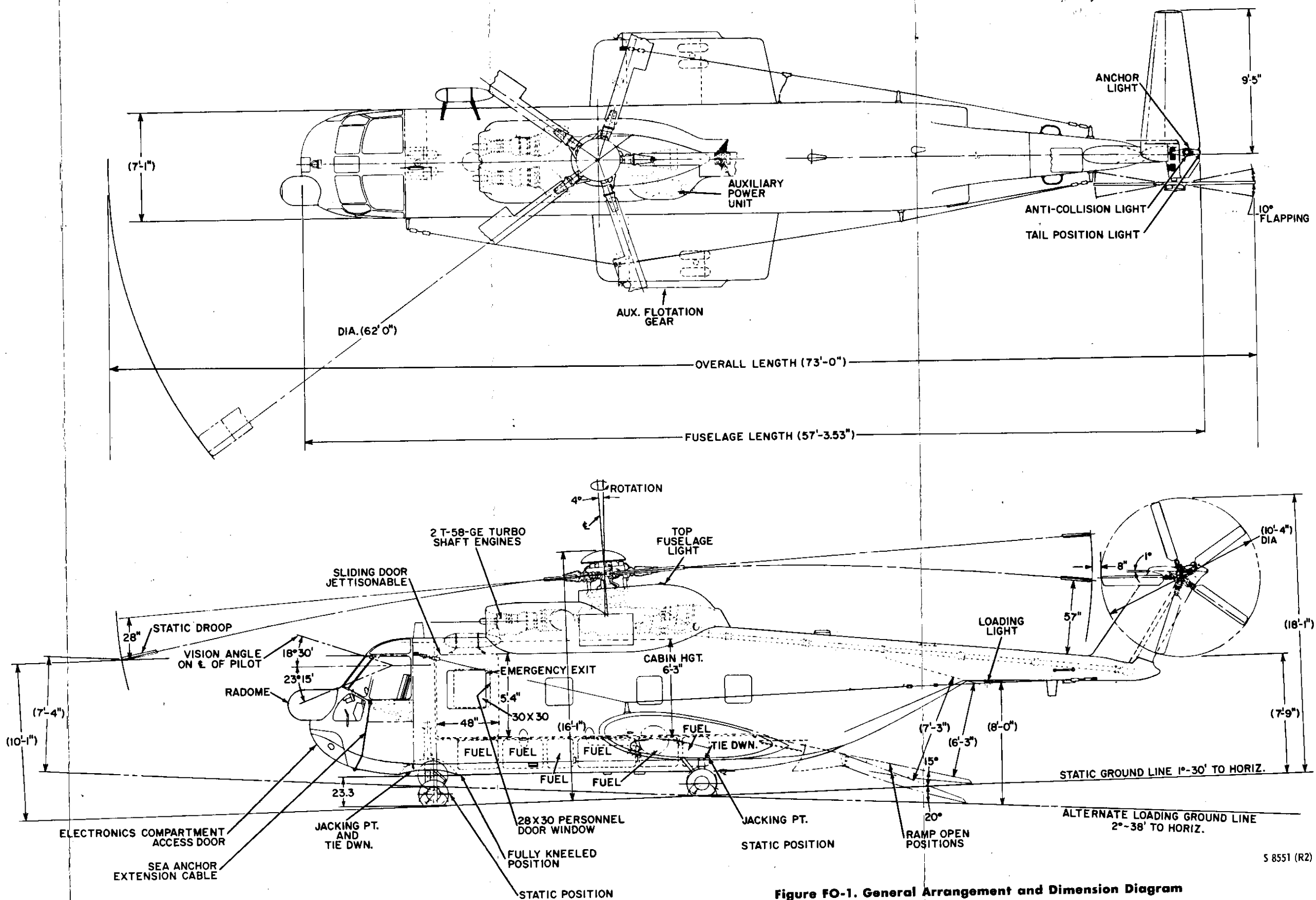
1) Encyclopedia of Nautical Knowledge W.A. McEwen and A.N. Lewis, Cornell Maritime Press, Cambridge, Maryland 1953, p. 483

2) Manual of Seamanship, Volume II, Admiralty, London, H.M. Stationary Office, 1952, pp. 717-713

3) Practical Methods observing and forecasting Ocean Waves, Pierson, Neumann, James, N.Y. Univ. College of Engin, 1953

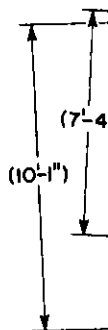
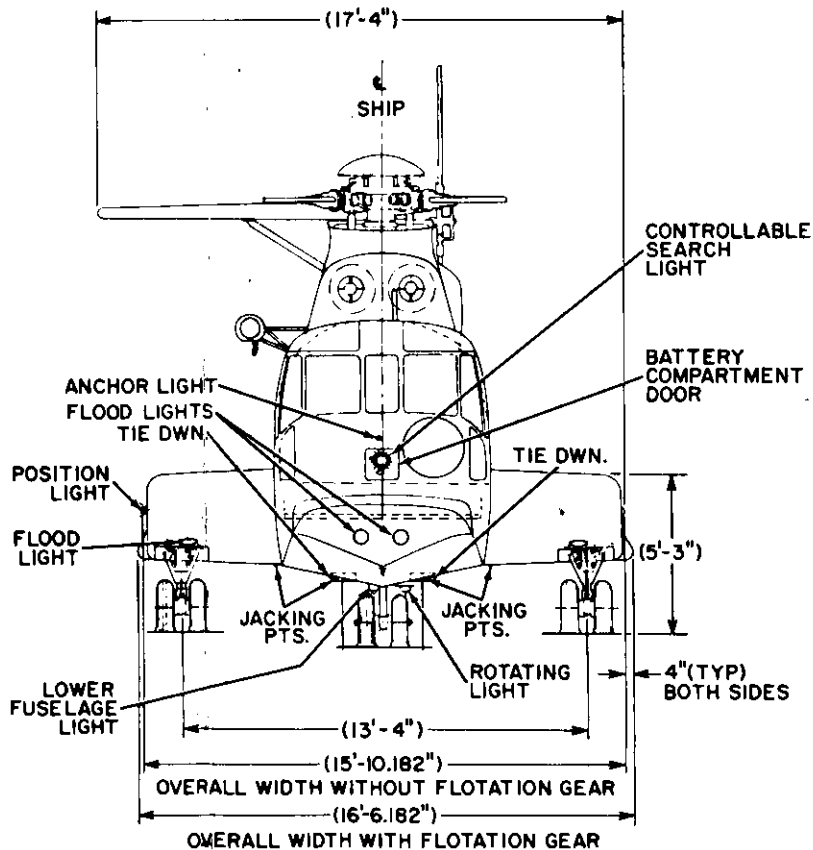
S 8592 (R2)

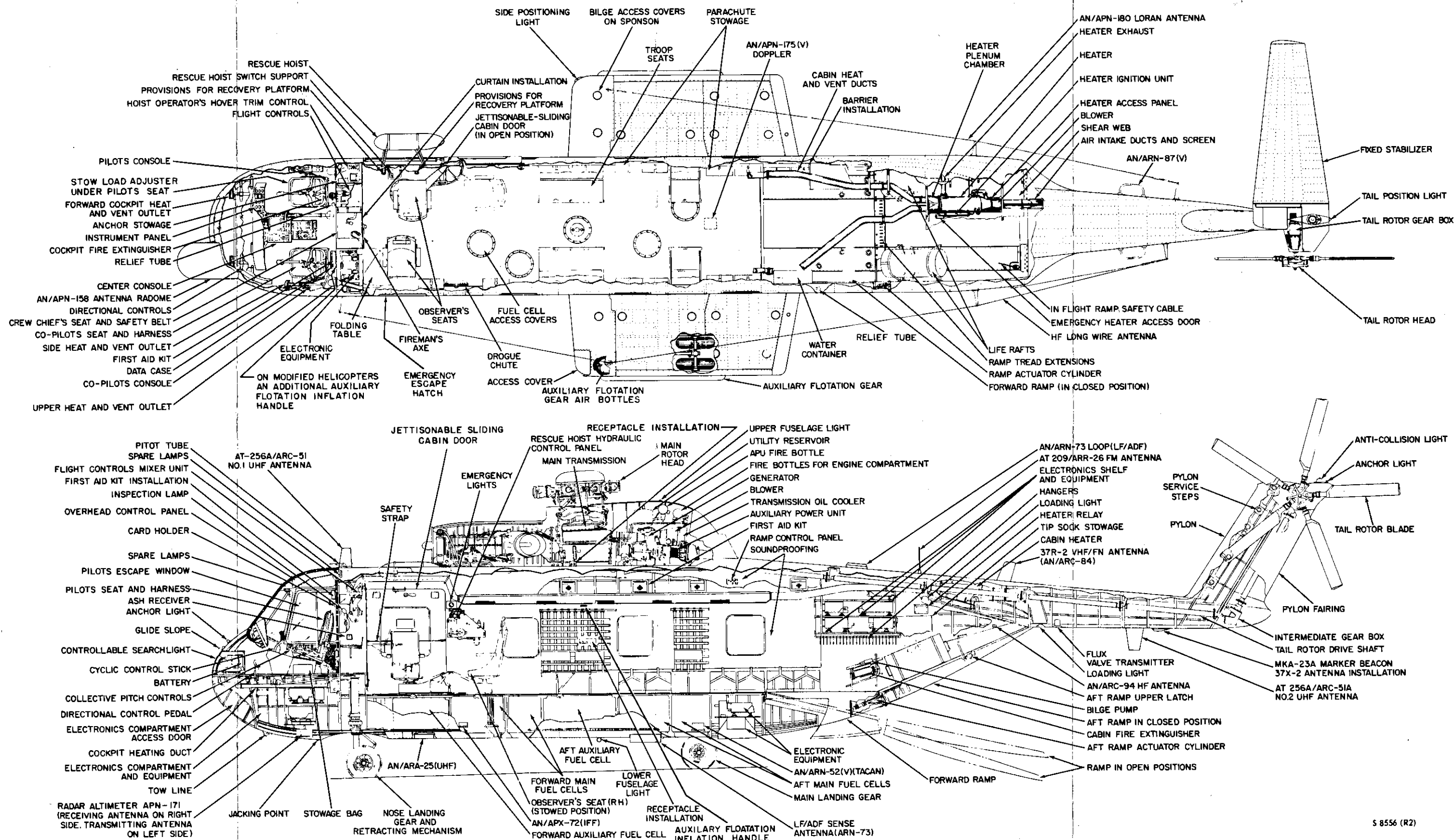
Figure 2-13. Wind-Sea State Table



S 8551 (R2)

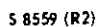
Figure FO-1. General Arrangement and Dimension Diagram

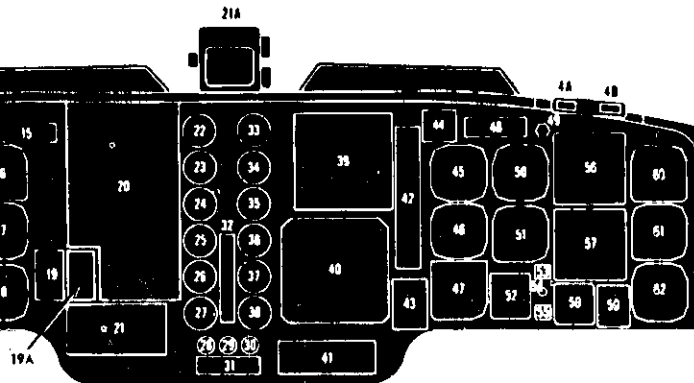




S 8556 (R2)

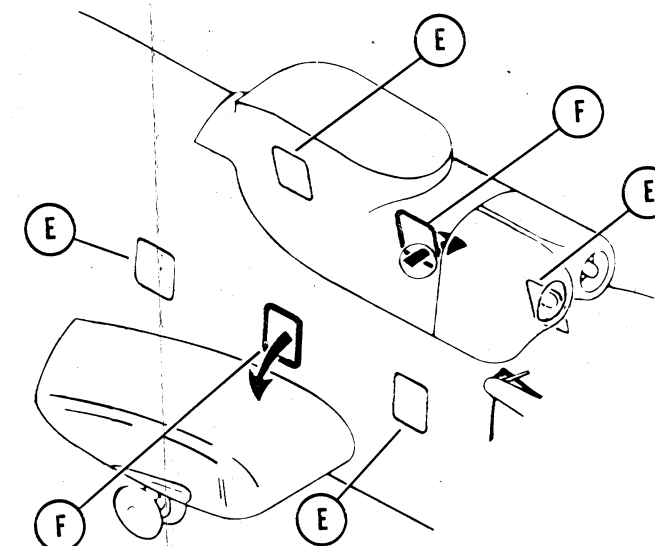
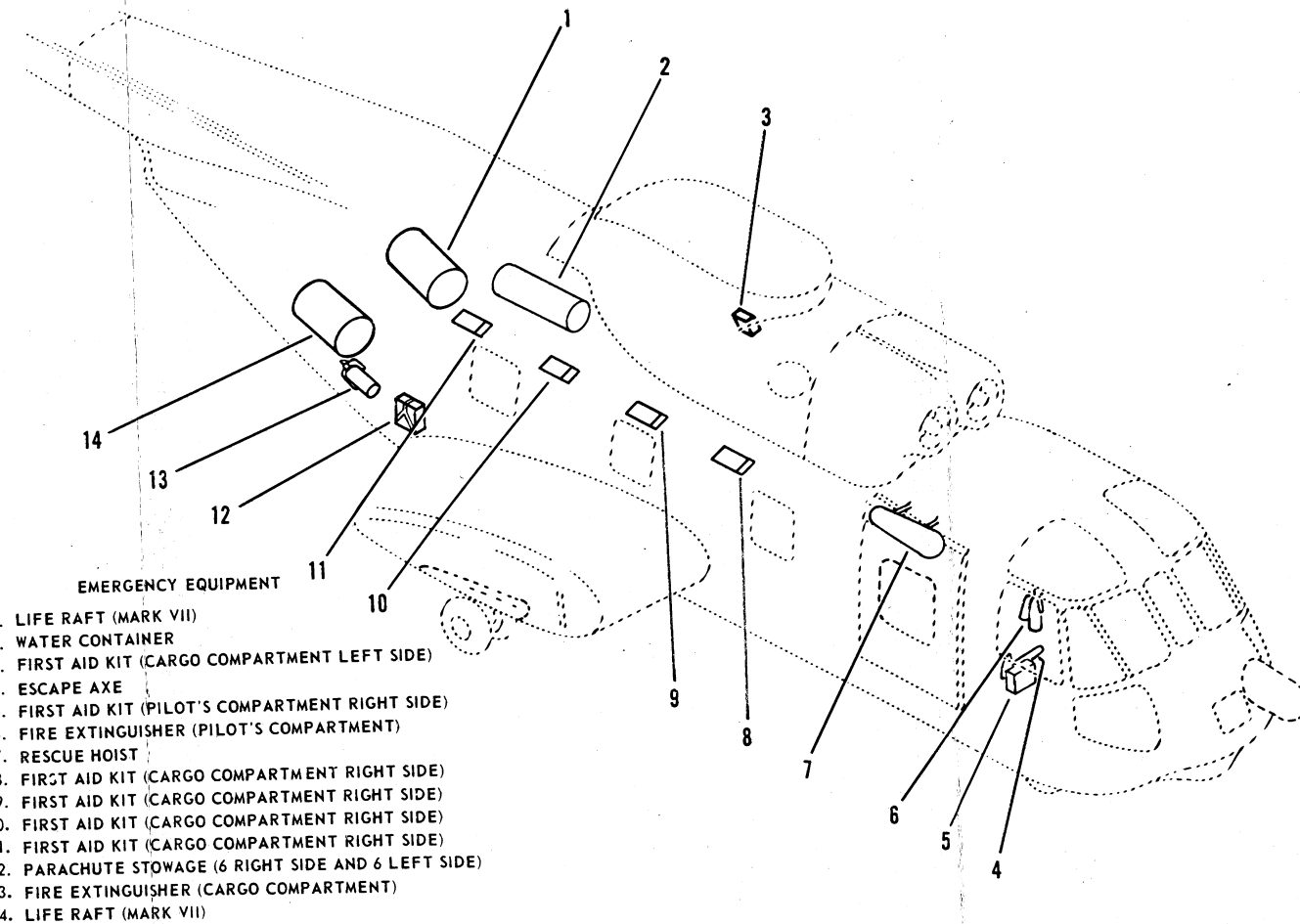
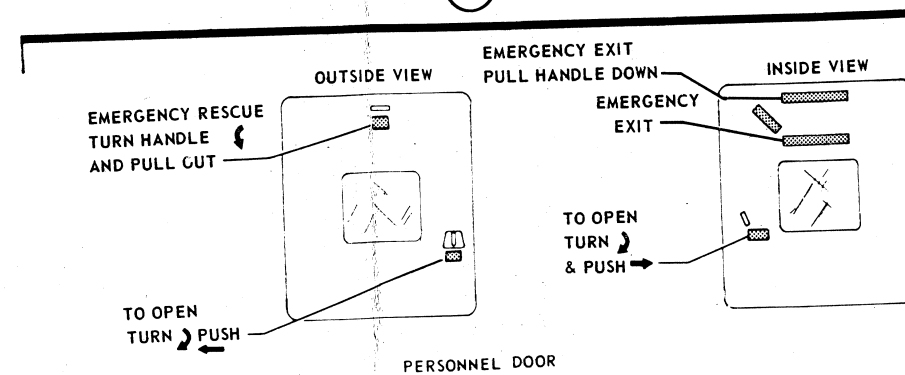
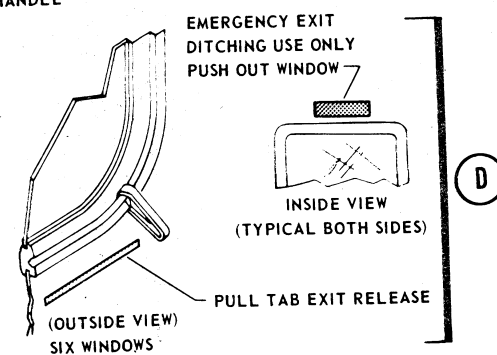
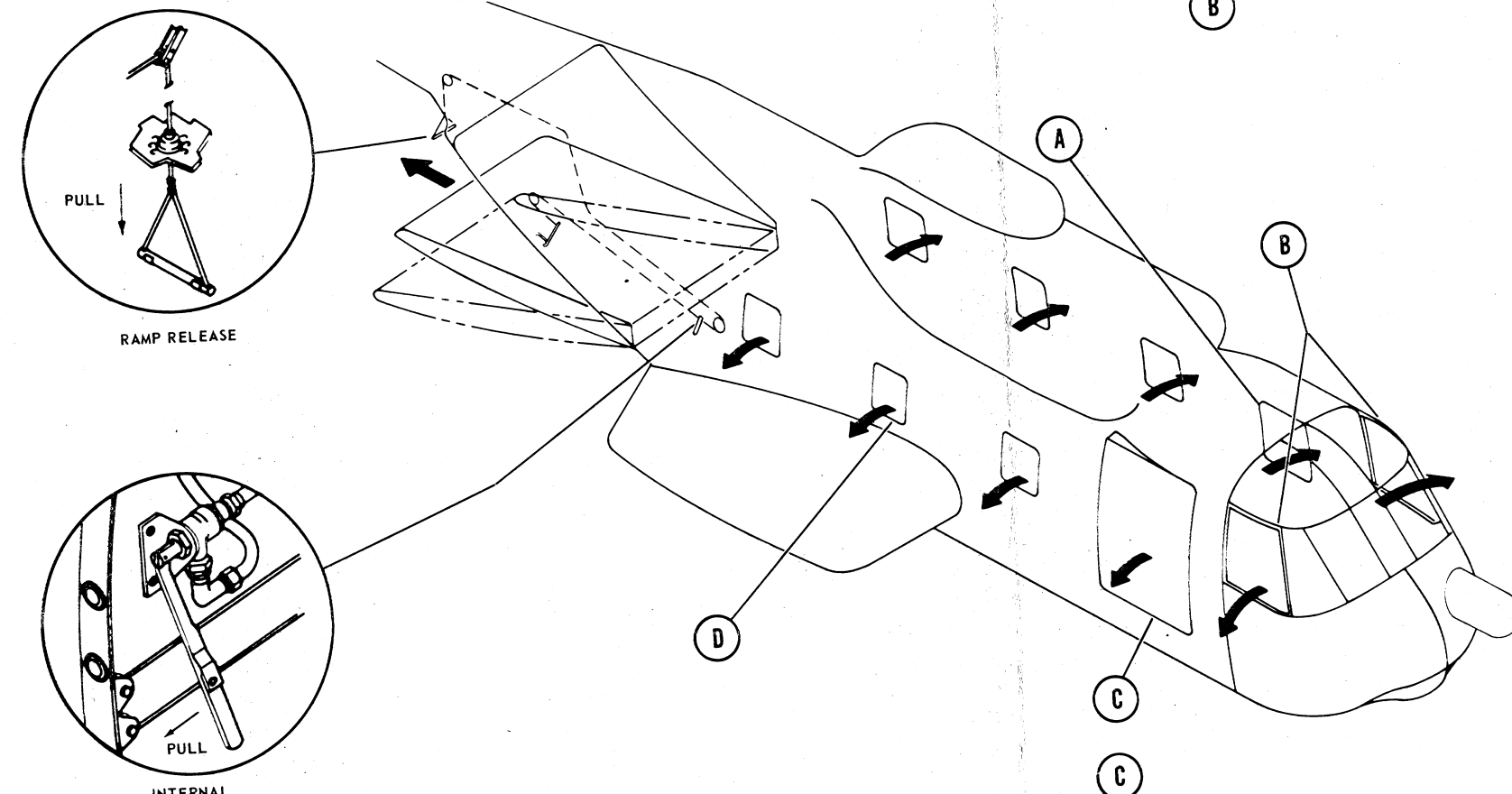
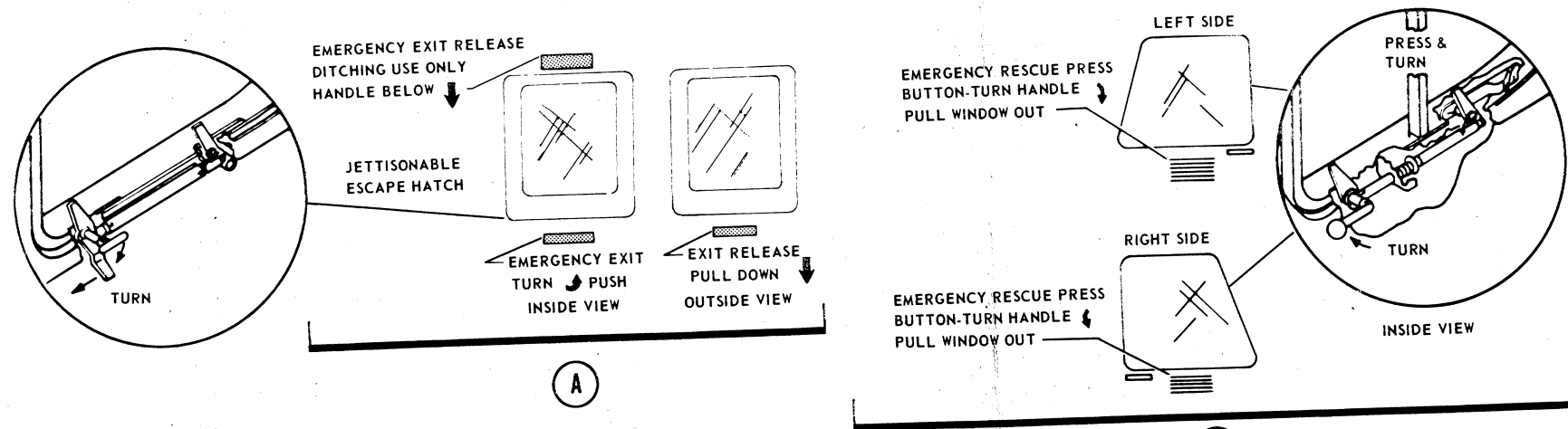
Figure FO-2. Interior Arrangement Diagram

**FO-3**



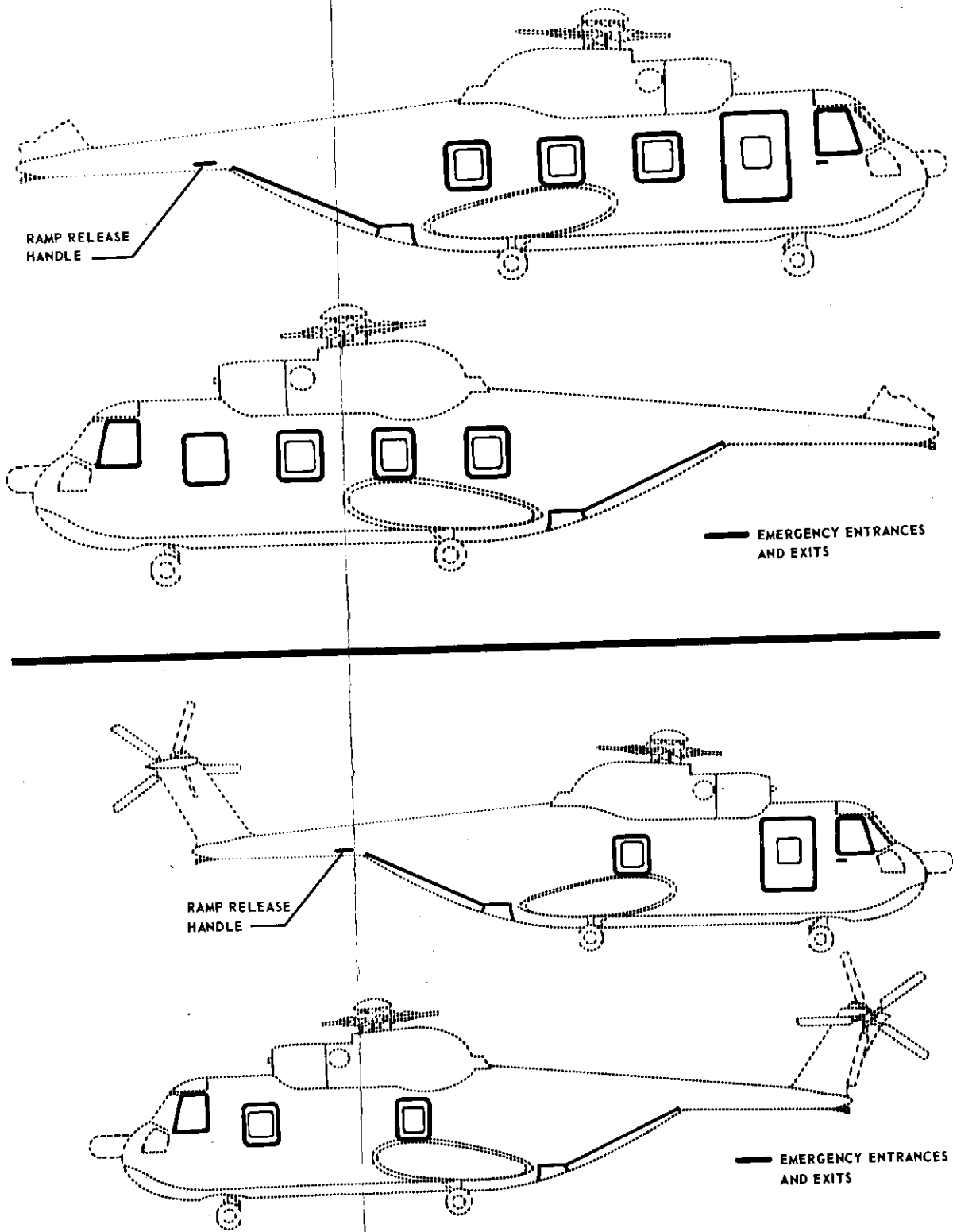
47. AFCS INDICATOR
48. AIRSPEED CORRECTION CARD
49. MARKER BEACON LIGHT
50. AIRSPEED INDICATOR
51. VERTICAL VELOCITY INDICATOR
52. TURN AND SLIP INDICATOR
53. VOR MASTER LIGHT
54. VOR MASTER/TACAN SLAVE SELECTOR SWITCH
55. TACAN SLAVE LIGHT
56. FLIGHT DIRECTOR - ATTITUDE INDICATOR
61. FLIGHT DIRECTOR - COURSE INDICATOR
58. CLOCK
59. LF/ADF - VOR SELECTOR PANEL
60. RADAR ALTIMETER
61. PRESSURE ALTIMETER
62. RADIO MAGNETIC INDICATOR (RMI)

Change 2 **FO-4**



EFFECTIVITY

HELICOPTERS MODIFIED BY T.C.T.O. 1H-3(H)F-523
AND CG 1480 AND SUBSEQUENT



EFFECTIVITY
HELICOPTERS MODIFIED BY T.C.T.O. 1H-3(H)F-523 AND CG 1480 AND SUBSEQUENT

§ 8578 (C1)

Figure FO-10. Emergency Exits, Entrances and Equipment

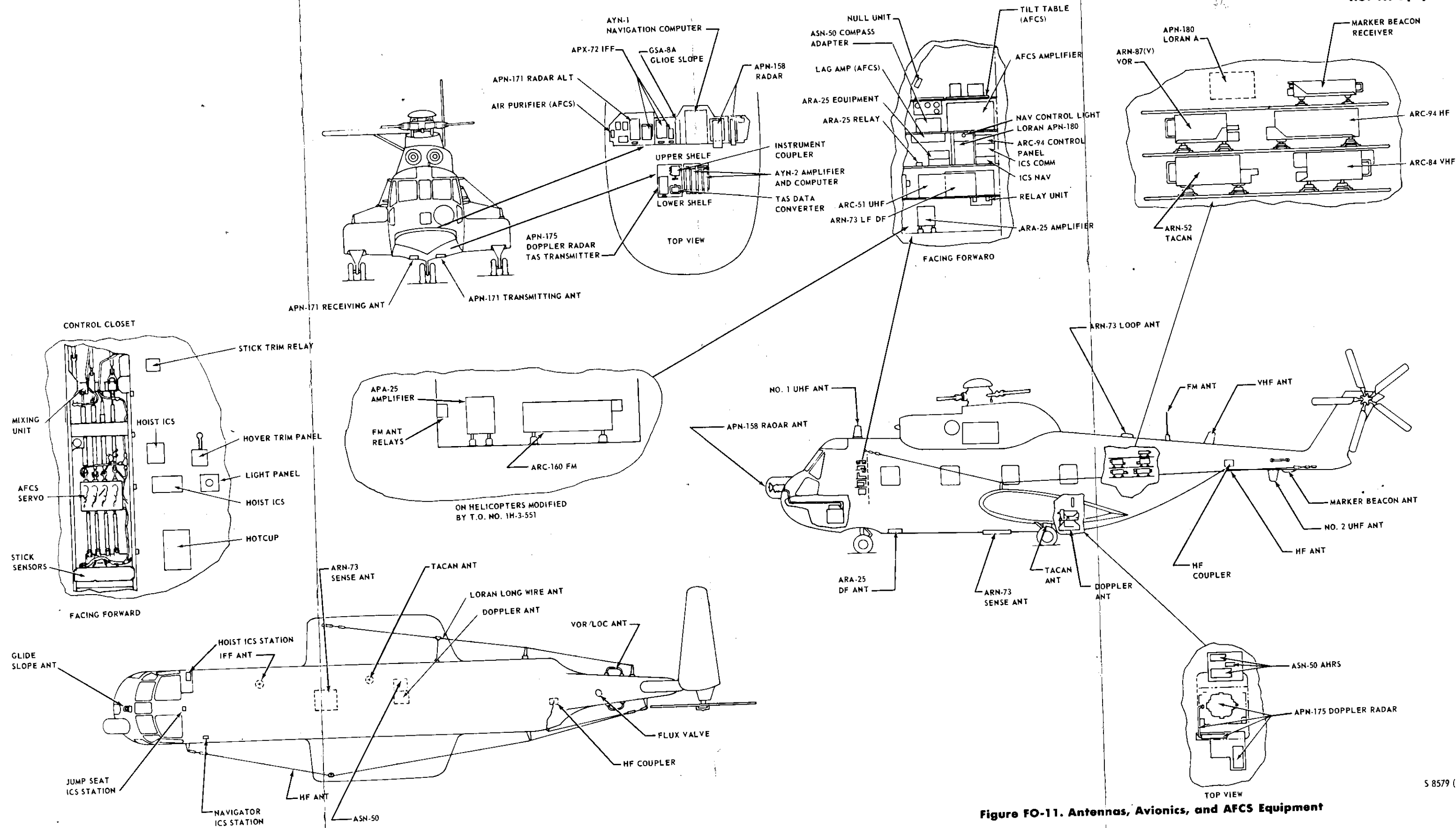


Figure FO-11. Antennas, Avionics, and AFCS Equipment