



AIRCRAFT MAINTENANCE MANUAL

FUEL QUANTITY MEASURING STICKS - INSPECTION/CHECK

EFFECTIVITY: ALL

1. General

- A. This section gives the procedure to do a manual measuring of the fuel quantity in each fuel tank.
- B. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	DESCRIPTION	EFFECTIVITY
12-11-04-700-801-A	FUEL-QUANTITY MEASURING STICK SYSTEM - MEASUREMENT	ACFT WITH DRY WINGSTUB
12-11-04-700-802-A	FUEL-QUANTITY MEASURING STICK SYSTEM - MEASUREMENT	ACFT WITH WET WINGSTUB



EMB145 – EMB135

AIRCRAFT
MAINTENANCE MANUAL

TASK 12-11-04-700-801-A

EFFECTIVITY: ACFT WITH DRY WINGSTUB

2. FUEL-QUANTITY MEASURING STICK SYSTEM - MEASUREMENT

A. General

- (1) The fuel measuring stick assemblies are on the wing lower surface. There are two of them in each half-wing.
- (2) Each measuring point has a magnetic float, which holds a calibrated stick. When it is at the fuel level, the stick gives a visual indication of the total fuel quantity on that side.

B. References

REFERENCE	DESIGNATION
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

ZONE	PANEL/DOOR	LOCATION
500		Left half-wing
600		Right half-wing

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

QTY	FUNCTION	PLACE
1	Does the task	At the half-wings

I. Preparation

SUBTASK 841-002-A

- (1) Make sure that the aircraft is safe for maintenance.
- (2) Do not do other tasks on the aircraft because it will cause error on the stick position measurement.
- (3) Energize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

- (4) **NOTE:** After the aircraft refueling or the deactivation of the fuel pumps, it is necessary to stop for a minimum of 10 minutes and then make the reading.

The aircraft must be laterally leveled (roll and pitch angle) as follows (Figure 601):

- Make sure that the roll angle is -1° to 1° and the pitch angle is -2° to 2°.
- Use the RA knob, on DC-550 display controller (pilot or copilot side), and set the DH (decision height) to "690".
- Push the RA test button and ET pushbutton, on the DC-550 display controller, at the same time and for a minimum of 10 seconds.
- The PFD display will show the pitch and roll values.

NOTE: If not, it will be necessary to maneuver the aircraft and park it at the necessary parking position to have the correct roll and pitch angle limits.

J. Fuel Level Measure (Figure 602)

SUBTASK 750-002-A

WARNING: MAKE SURE THE STICK IS CLEAR AND CAN MOVE FREELY. IF STICK DOES NOT MOVE FREELY, A WRONG FUEL MEASUREMENT WILL OCCUR.

- (1) At the wing undersurface, turn the stick latch counterclockwise to release the stick from the housing and permit it to fall. Make sure that the stick falls freely until it is held by the magnet float.

NOTE: To determine the fuel quantity in one of the wings, start the measurements from the wing tip and go in the direction of the wing root, until you have a point which is not at the lower stop ("zero" reading on the scale). The value found must then be entered in table 601.

Table 601 - FUEL LEVEL MEASURE

STICK INDICATION	FUEL QUANTITY (USABLE) ^[1]			
	STICK 1 (internal tank)		STICK 2 (external tank)	
	LITERS	US GAL	LITERS	US GAL
0.1	448	118	1503	397
0.2	455	120	1516	401
0.3	462	122	1530	404
0.4	469	124	1543	408
0.5	476	126	1556	411
0.6	483	128	1570	415
0.7	490	129	1583	418
0.8	497	131	1597	422
0.9	505	133	1610	425
1.0	512	135	1623	429
1.1	520	137	1637	432
1.2	527	139	1645	435

[1] (Roll : -1° to 1°; Pitch: -2° to 2°)

Table 601 - FUEL LEVEL MEASURE (Continued)

STICK INDICATION	FUEL QUANTITY (USABLE) ^[1]			
	STICK 1 (internal tank)		STICK 2 (external tank)	
	LITERS	US GAL	LITERS	US GAL
1.3	535	141	1663	439
1.4	543	143	1677	443
1.5	550	145	1690	447
1.6	558	148	1703	450
1.7	566	150	1717	454
1.8	574	152	1730	457
1.9	582	154	1744	461
2.0	591	156	1757	464
2.1	599	158	1770	468
2.2	607	160	1784	471
2.3	615	163	1797	475
2.4	624	165	1810	478
2.5	632	167	1824	482
2.6	641	169	1837	485
2.7	650	172	1851	489
2.8	658	174	1864	492
2.9	667	176	1877	496
3.0	676	179	1891	499
3.1	685	181	1904	503
3.2	694	183	1917	507
3.3	703	186	1931	510
3.4	712	188	1944	514
3.5	721	191	1957	517
3.6	730	193	1971	521
3.7	740	195	1984	524
3.8	749	198	1998	528
3.9	759	200	2011	531
4.0	768	203	2024	535
4.1	778	205	2037	538
4.2	787	208	2051	542
4.3	797	211	2064	545
4.4	807	213	2078	549
4.5	817	216	2091	552
4.6	827	218	2104	556
4.7	837	221	2118	560
4.8	847	224	2131	563

[1] (Roll : -1° to 1°; Pitch: -2° to 2°)

Table 601 - FUEL LEVEL MEASURE (Continued)

STICK INDICATION	FUEL QUANTITY (USABLE) ^[1]			
	STICK 1 (internal tank)		STICK 2 (external tank)	
	LITERS	US GAL	LITERS	US GAL
4.9	857	226		
5.0	868	229		
5.1	878	232		
5.2	888	235		
5.3	899	237		
5.4	909	240		
5.5	920	243		
5.6	930	246		
5.7	941	249		
5.8	952	252		
5.9	963	254		
6.0	974	257		
6.1	985	260		
6.2	996	263		
6.3	1007	266		
6.4	1018	269		
6.5	1030	272		
6.6	1041	275		
6.7	1052	278		
6.8	1064	281		
6.9	1076	284		
7.0	1087	287		
7.1	1099	290		
7.2	1111	293		
7.3	1123	297		
7.4	1134	300		
7.5	1146	303		
7.6	1159	306		
7.7	1171	309		
7.8	1183	312		
7.9	1195	316		
8.0	1208	319		
8.1	1220	322		
8.2	1232	326		
8.3	1245	329		
8.4	1258	332		

[1] (Roll : -1° to 1°; Pitch: -2° to 2°)

Table 601 - FUEL LEVEL MEASURE (Continued)

STICK INDICATION	FUEL QUANTITY (USABLE) ^[1]			
	STICK 1 (internal tank)		STICK 2 (external tank)	
	LITERS	US GAL	LITERS	US GAL
8.5	1270	336		
8.6	1283	339		
8.7	1296	342		
8.8	1309	346		
8.9	1322	349		
9.0	1335	353		
9.1	1348	356		
9.2	1361	360		
9.3	1374	363		
9.4	1388	367		
9.5	1401	370		
9.6	1415	374		
9.7	1428	377		
9.8	1442	381		
9.9	1455	385		
10.0	1469	388		
10.1	1483	392		
10.2	1497	395		
10.3	1511	399		
10.4	1525	403		
10.5	1539	407		
10.6	1553	410		

[1] (Roll : -1° to 1°; Pitch: -2° to 2°)

- (2) After the fuel reading, close the stick in its housing.

K. Follow-on

SUBTASK 842-002-A

- (1) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

TASK 12-11-04-700-802-A
EFFECTIVITY: ACFT WITH WET WINGSTUB
3. FUEL-QUANTITY MEASURING STICK SYSTEM - MEASUREMENT
A. General

- (1) The fuel measuring stick assemblies are on the half-wing and wing stub lower surface. There are two of them in each half-wing and two in the wing stub.
- (2) Each measuring point has a magnetic float, which holds a calibrated stick. When it is at the fuel level, the stick gives a visual indication of the total fuel quantity on the related side.

B. References

<i>REFERENCE</i>	<i>DESIGNATION</i>
AMM TASK 20-40-01-860-801-A/200	ENERGIZATION OF THE AIRCRAFT WITH AN EXTERNAL POWER SOURCE

C. Zones and Accesses

<i>ZONE</i>	<i>PANEL/DOOR</i>	<i>LOCATION</i>
500		Left half-wing
600		Right half-wing
155		Wing stub - LH
156		Wing stub - RH

D. Tools and Equipment

Not Applicable

E. Auxiliary Items

Not Applicable

F. Consumable Materials

Not Applicable

G. Expandable Parts

Not Applicable

H. Persons Recommended

<i>QTY</i>	<i>FUNCTION</i>	<i>PLACE</i>
1	Does the task	On the half-wings and wing stub

I. Preparation
SUBTASK 841-003-A

- (1) Make sure that the aircraft is safe for maintenance.
- (2) Do not do other tasks on the aircraft because it will cause error on the stick position measurement.

- (3) Energize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).
- (4) **NOTE:** After the aircraft refueling or the deactivation of the fuel pumps, it is necessary to stop for a minimum of 10 minutes and then make the reading.

The aircraft must be laterally leveled (roll and pitch angle) as follows ([Figure 601](#)):

- Make sure that the roll angle is -1° to 1° and the pitch angle is -2° to 2°.
- Use the RA knob, on the DC-550 display controller (pilot or copilot side), and set the DH (decision height) to "690".
- Push the RA test button and ET pushbutton, on the DC-550 display controller, at the same time and for a minimum of 10 seconds.
- The PFD display will show the pitch and roll values.

NOTE: If not, it will be necessary to maneuver the aircraft and park it at the necessary parking position to have the correct roll and pitch angle limits.

J. Fuel Level Measurement ([Figure 602](#))

SUBTASK 750-003-A

WARNING: MAKE SURE THE STICK IS CLEAR AND CAN MOVE FREELY. IF STICK DOES NOT MOVE FREELY, A WRONG FUEL MEASUREMENT WILL OCCUR.

- (1) At the wing undersurface, turn the stick latch counterclockwise to release the stick from the housing and permit it to fall. Make sure that the stick falls freely until it is held by the magnet float.

NOTE: To determine the fuel quantity in one of the wings, start the measurements from the wing tip and go in the direction of the wing root, until you have a point which is not at the lower stop ("zero" reading on the scale). The value found must then be entered in table 602.

Table 602 - FUEL LEVEL MEASURE

STICK INDICATION	FUEL QUANTITY (USABLE) ^[1]					
	STICK 1 (wing stub)		STICK 2 (wing root)		STICK 3 (wing tip)	
	LITERS	US GAL	LITERS	US GAL	LITERS	US GAL
0.1	7	2	781	206	2163	571
0.2	14	4	794	210	2184	577
0.3	22	6	805	213	2203	582
0.4	29	8	817	216	2220	586
0.5	36	10	827	219	2235	590
0.6	43	11	838	221	2249	594
0.7	50	13	848	224	2263	598
0.8	56	15	858	227	2276	601
0.9	63	17	868	229	2288	605
1.0	69	18	878	232	2301	608

[1] (Roll : -1° to 1°; Pitch: -2° to 2°)

Table 602 - FUEL LEVEL MEASURE (Continued)

STICK INDICATION	FUEL QUANTITY (USABLE) ^[1]					
	STICK 1 (wing stub)		STICK 2 (wing root)		STICK 3 (wing tip)	
	LITERS	US GAL	LITERS	US GAL	LITERS	US GAL
1.1	74	20	888	235	2314	611
1.2	80	21	898	237	2327	615
1.3	85	23	907	240	2340	618
1.4	90	24	917	242	2354	622
1.5	95	25	927	245	2368	626
1.6	100	26	937	248	2383	630
1.7	104	28	947	250	2398	633
1.8	109	29	957	253	2413	638
1.9	113	30	968	256	2429	642
2.0	116	31	978	258	2445	646
2.1	120	32	989	261	2461	650
2.2	123	33	1000	264	2477	654
2.3	129	34	1011	267	2493	659
2.4	136	36	1022	270	2508	663
2.5	140	37	1034	273	2524	667
2.6	144	38	1045	276	2539	671
2.7	148	39	1057	279	2553	674
2.8	155	41	1069	282	2567	678
2.9	164	43	1081	286	2580	682
3.0	173	46	1093	289	2593	685
3.1	181	48	1105	292	2604	688
3.2	188	50	1118	295	2615	691
3.3	195	51	1130	299	2625	693
3.4	201	53	1143	302	2634	696
3.5	207	55	1156	305	2643	698
3.6	213	56	1169	309	2651	700
3.7	218	58	1182	312	2658	702
3.8	224	59	1194	316	2666	704
3.9	229	60	1208	319	2673	706
4.0	234	62	1221	322	2680	708
4.1	239	63	1234	326	2687	710
4.2	244	64	1247	329	2696	712
4.3	249	66	1260	333	2706	715
4.4	254	67	1273	336	2717	718
4.5	259	68	1286	340	2731	721
4.6	265	70	1300	343	2747	726

[1] (Roll : -1° to 1°; Pitch: -2° to 2°)

Table 602 - FUEL LEVEL MEASURE (Continued)

STICK INDICATION	FUEL QUANTITY (USABLE) ^[1]					
	STICK 1 (wing stub)		STICK 2 (wing root)		STICK 3 (wing tip)	
	LITERS	US GAL	LITERS	US GAL	LITERS	US GAL
4.7	270	71	1313	347	2767	731
4.8	276	73	1326	350	2791	737
4.9	281	74	1339	354		
5.0	287	76	1352	357		
5.1	293	78	1365	361		
5.2	300	79	1378	364		
5.3	306	81	1391	368		
5.4	313	83	1404	371		
5.5	320	85	1418	374		
5.6	327	86	1431	378		
5.7	334	88	1444	381		
5.8	342	90	1457	385		
5.9	350	92	1470	388		
6.0	357	94	1483	392		
6.1	365	97	1496	395		
6.2	374	99	1509	399		
6.3	382	101	1522	402		
6.4	390	103	1535	405		
6.5	399	105	1548	409		
6.6	408	108	1561	412		
6.7	416	110	1574	416		
6.8	425	112	1588	419		
6.9	434	115	1601	423		
7.0	443	117	1615	427		
7.1	452	119	1629	430		
7.2	461	122	1642	434		
7.3	470	124	1656	438		
7.4	479	126	1670	441		
7.5	488	129	1685	445		
7.6	497	131	1699	449		
7.7	505	134	1714	453		
7.8	514	136	1729	457		
7.9	523	138	1744	461		
8.0	532	141	1759	465		
8.1	541	143	1774	469		
8.2	550	145	1790	473		

[1] (Roll : -1° to 1°; Pitch: -2° to 2°)

Table 602 - FUEL LEVEL MEASURE (Continued)

STICK INDICATION	FUEL QUANTITY (USABLE) ^[1]					
	STICK 1 (wing stub)		STICK 2 (wing root)		STICK 3 (wing tip)	
	LITERS	US GAL	LITERS	US GAL	LITERS	US GAL
8.3	558	147	1806	477		
8.4	567	150	1822	481		
8.5	576	152	1838	486		
8.6	585	154	1855	490		
8.7	593	157	1872	494		
8.8	602	159	1889	499		
8.9	611	161	1906	503		
9.0	620	164	1923	508		
9.1	629	166	1941	513		
9.2	639	169	1958	517		
9.3	648	171	1976	522		
9.4	658	174	1994	527		
9.5	668	176	2012	531		
9.6	679	179	2030	536		
9.7	689	182	2048	541		
9.8	701	185	2065	546		
9.9	713	188	2083	550		
10.0	725	192	2101	555		
10.1	738	195	2118	560		
10.2	752	199	2135	564		
10.3	767	203	2152	568		
10.4	783	207	2168	573		

[1] (Roll : -1° to 1°; Pitch: -2° to 2°)

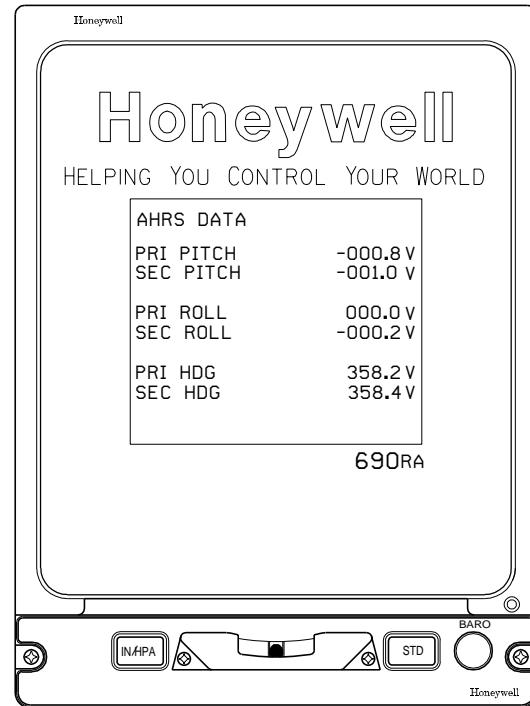
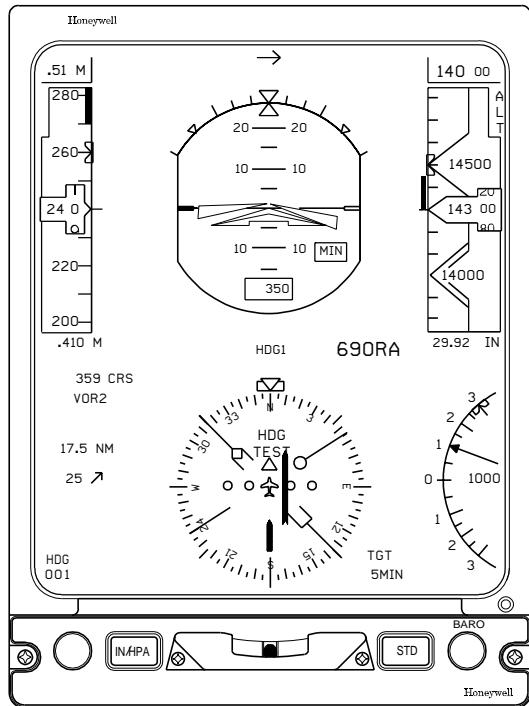
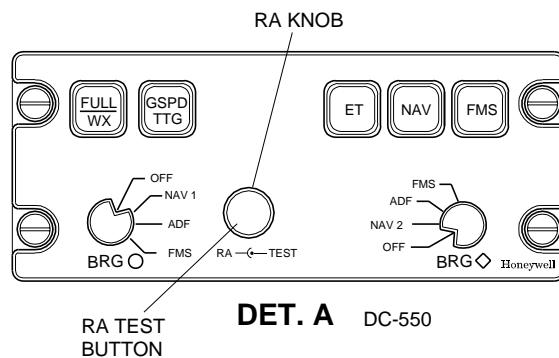
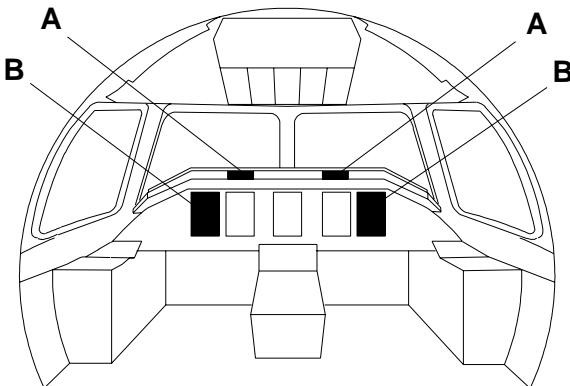
- (2) After the fuel reading, close the stick in its housing.

K. Follow-on

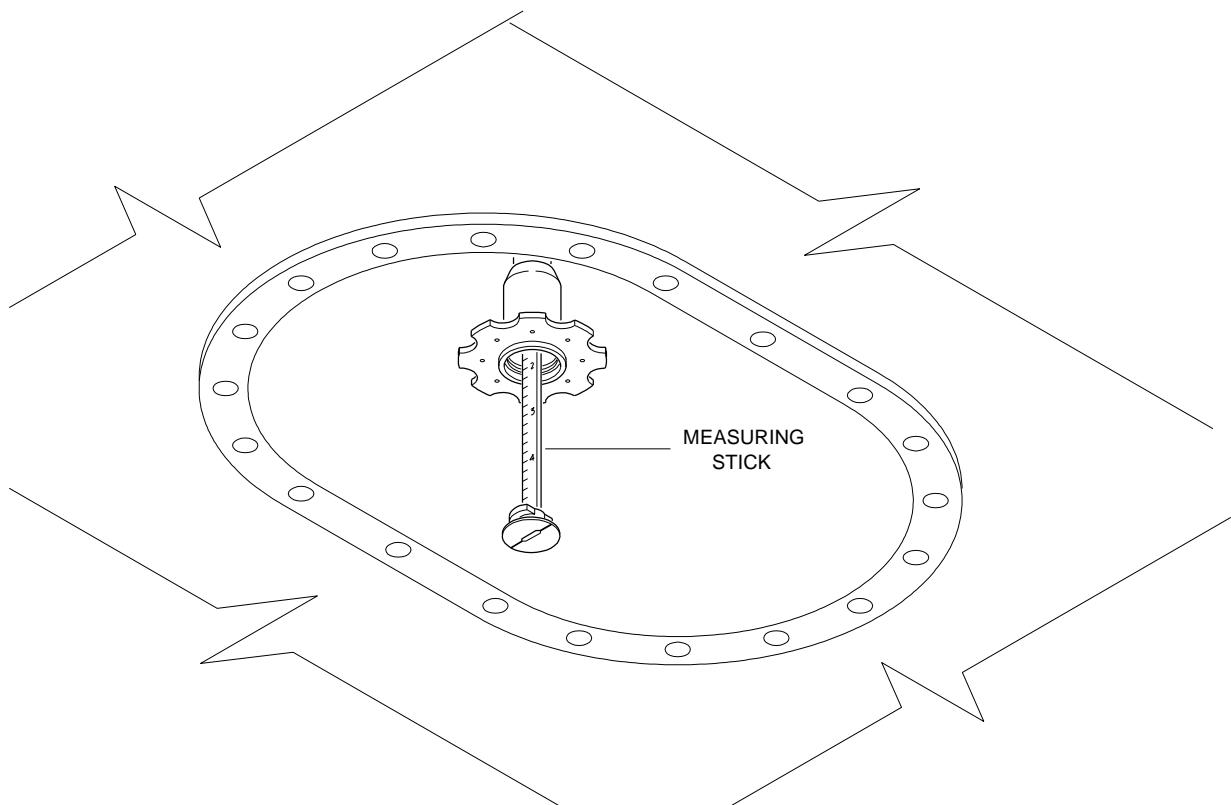
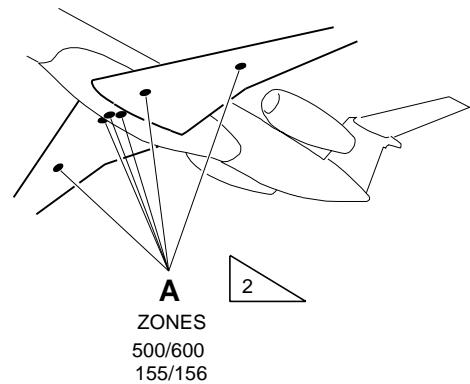
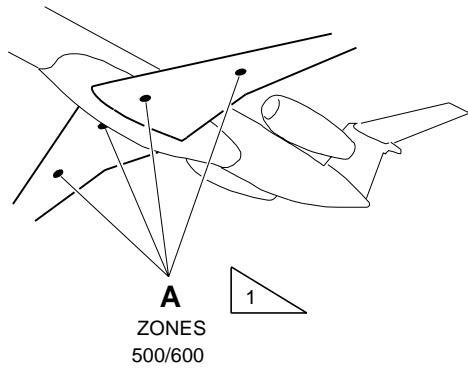
SUBTASK 842-003-A

- (1) Deenergize the aircraft ([AMM TASK 20-40-01-860-801-A/200](#)).

EFFECTIVITY: ACFT WITH WET WINGSTUB
Roll and Pitch Angles
Figure 601



EFFECTIVITY: ACFT WITH WET WINGSTUB
Direct Measuring Points
Figure 602



1 ACFT WITH DRY WINGSTUB.

2 ACFT WITH WET WINGSTUB.

DET. A

EM145AMM120074B.DGN

