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**WEIGHT AND BALANCE  
REPORTS  
AND  
EQUIPMENT LISTS**

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BASIC WEIGHT AND BALANCE RECORD



MODEL: <b>Bell 407</b>		Serial No. <b>53921</b>		REGISTRATION NUMBER						Page No. <b>1</b>		
DATE	Items Removed/ Installed <b>IN</b> <b>OUT</b> <b>{ 1 }   { 2 }</b>	DESCRIPTION OR MODIFICATION		LOADING CHANGE			BASIC EMPTY WEIGHT			MOMENT & CG		SIGNATURE (4)
		WEIGHT (3) (lbs)	LONG STA CG (in)	LAT STA CG (in)	WEIGHT (lbs)	LONG STA CG (in)	LONG MOMENT (lbs in)	LAT CG (in)	LAT MOMENT (lbs in)			
11-Sep-09		ACTUAL WEIGHT & BALANCE (See Page 3)					3125.1	131.1	409795	0.0	-67	

Note: (1) IN = installed component    Note: (2) OUT = removed component    Note: (3) Weight of an installed component is positive ( + )    Weight of a removed component is negative ( - )  
Note: (4) The signer has ensured revised EW & CG is within the Empty Weight Envelope.



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**Actual Weight and Balance Record - Model 407**

Date: **11-Sep-09**  
Reg. N<sup>o</sup>: **N4144C**

Serial N<sup>o</sup>: **53921**

Place Weighed: **BHTCL**  
**Mirabel**  
**PQ, Canada**

Date Weighed: **11-Sep-09**

The aircraft was weighed with the fluid systems in the condition described:

Fuel System: Drained (Undrainable Fuel 4.7 lb. @ FS 110.6)  
Engine Oil System: Full (Undrainable Oil 1.6 lb. @ FS 192.0)  
Transmission Oil System: Full  
Hydraulic System: Full  
Ballast Installed: 38 lb in Landing Light Bay.

Item Description	Weight	Centre of Gravity	
		Long.	Lateral
Empty Weight (includes unusable fuel & undrainable oil)	3125.1	131.1	0.0

**Stacy McMillan**  
Inspector For  
Edwards & Associates, Inc.  
FAA Repair Station FKFR930D



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Actual Weight and Balance Record - Model 407

Date: 11-Sep-09  
Reg. N°: N4144C

Serial N°: 53921

Weighing Results

[ Units = pounds (lb.), inches (in.), US gallons (gal.) ]

Cell Location	Reading	Tare	Net Tare
Forward Jackpoint [ FS 55.16, BL -16.82 ]	674.0	0.0	674.0
Forward Jackpoint [ FS 55.16, BL +16.82 ]	676.0	0.0	676.0
Aft Jackpoint [ FS 204.92, BL 0.00 ]	1498.0	0.0	1498.0
<b>Total</b>	<b>2848.0</b>	<b>0.0</b>	<b>2848.0</b>

Longitudinal CG as weighed

$$\begin{aligned} \text{CG} &= \frac{[\text{Fwd FS} \times (\text{LH weight} + \text{RH weight})] + [\text{Aft FS} \times \text{Aft weight}]}{\text{Total weight}} \\ &= \frac{[55.16 \times (674.0 + 676.0)] + [204.92 \times 1498.0]}{(674.0 + 676.0 + 1498.0)} \\ &= \frac{381436}{2848.0} = 133.9 \text{ in.} \end{aligned}$$

Lateral CG as weighed

$$\begin{aligned} \text{CG} &= \frac{(\text{Fwd LBL} \times \text{LH weight}) + (\text{Fwd RBL} \times \text{RH weight}) + (\text{Aft BL} \times \text{Aft weight})}{\text{Total weight}} \\ &= \frac{(-16.82 \times 674.0) + (16.82 \times 676.0) + (0.0 \times 1498.0)}{(674.0 + 676.0 + 1498.0)} \\ &= \frac{34}{2848.0} = 0.0 \text{ in.} \end{aligned}$$



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**Actual Weight and Balance Record - Model 407**

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Reg. N<sup>o</sup>: N4144C

Serial N<sup>o</sup>: 53921

**Empty Weight Derivation**

Item Description	Weight	Centre of Gravity and Moments			
		Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Aircraft as weighed (page 2)	2848.0	133.9	381436	0.0	34
Delete:					
Drainable Engine Oil	-13.0	205.0	-2665	0.0	0
Add:					
Residual Fuel	13.3	116.0	1543	0.0	0
First Aid Kit	1.8	91.0	164	15.0	27
M/R Blades (4)	237.0	121.2	28724	-0.7	-166
Ballast - Landing Light Bay	38.0	15.6	593	1.0	38
<b>Empty Weight</b>	<b>3125.1</b>	<b>131.1</b>	<b>409795</b>	<b>0.0</b>	<b>-67</b>



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**Actual Weight and Balance Record - Model 407**

Date: 11-Sep-09  
Reg. N°: N4144C

Serial N°: 53921

**Centre of Gravity Extremes**

**Most Forward CG**

Item Description	Weight	Centre of Gravity and Moments			
		Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Empty Weight (page3)	3125.1	131.1	409795	0.0	-67
+ Pilot	170.0	65.0	11050	14.0	2380
+ Passenger (1), Fwd	170.0	65.0	11050	-11.0	-1870
+ Passengers (2), Mid	340.0	91.0	30940	0.0	0
+ Engine Oil	13.0	205.0	2665	0.0	0
+ Most Fwd Fuel (JP5) 74.5 US gal.	506.6	116.1	58816	0.0	0
<b>Total</b>	<b>4324.7</b>	<b>121.2</b>	<b>524316</b>	<b>0.1</b>	<b>443</b>

**Most Aft CG**

Item Description	Weight	Centre of Gravity and Moments			
		Longitudinal		Lateral	
		Arm	Moment	Arm	Moment
Empty Weight (page 3)	3125.1	131.1	409795	0.0	-67
+ Pilot	170.0	65.0	11050	14.0	2380
+ Passengers (3), Aft	510.0	129.0	65790	0.0	0
+ Engine Oil	13.0	205.0	2665	0.0	0
+ Fuel (JP5) 146.9 US gal.	998.9	132.0	131855	0.0	0
<b>Total</b>	<b>4817.0</b>	<b>129.0</b>	<b>621155</b>	<b>0.5</b>	<b>2313</b>

**WARNING**

**MAXIMUM GROSS WEIGHT WILL BE EXCEEDED WITH FULL FUEL AND FULL PASSENGERS**



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**Actual Weight and Balance Record - Model 407**

Date: 11-Sep-09

Serial N°: 53921

Reg. N°: N4144C

**Equipment List - Required Equipment Installed**

Part Number	Item Description	Weight	Long. Arm	Lateral Arm
<b>Indicators:</b>				
206-070-263-101	Altimeter	1.4	37.0	11.3
206-075-725-103	Airspeed	0.9	38.0	4.3
407-375-001-107	MGT	0.8	37.1	1.3
407-375-002-105	Gas Producer Tachometer	0.9	37.4	1.3
407-375-003-109	Engine Torque	0.9	38.0	1.3
407-375-004-103	Engine Oil Pressure & Temp.	0.8	39.7	1.2
407-375-005-103	Transmission Oil Pressure & Temp.	0.8	37.6	-1.3
407-375-006-103	Fuel Quantity	0.8	37.4	-1.3
407-375-007-107	Fuel Pressure & Ammeter	0.9	37.1	-1.3
407-375-008-111	Dual Tachometer	2.7	37.2	4.3
407-375-015-111	Master Caution Panel	2.1	39.1	3.5
4300-311	Attitude Indicator	2.1	35.9	7.5
843-67-6-R	Vertical Speed	1.5	37.2	11.2
C2300L4-24B	Standby Compass	0.6	33.5	22.9
M803B-2-0/5V-BATT	Clock / OAT / Voltmeter	0.3	36.9	-1.3

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**Actual Weight and Balance Record - Model 407**

Date: 11-Sep-09  
Reg. N°: N4144C

Serial N°: 53921

**Equipment List - Required Equipment Installed**

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Part Number	Item Description	Weight	Long. Arm	Lateral Arm	
<b>Equipment:</b>					
206-062-200-113	Starter / Generator	20.7	165.8	6.5	
31908-001	Battery	60.6	15.8	1.0	
01-0770019-21	Anti-Collision Light	0.3	392.0	7.0	
4596	Lamp, Landing Light (2)	0.9	14.0	1.0	
01-0770028-05	Power Supply	1.5	186.0	9.0	E
<b>Position Lights:</b>					
B3307-10	Forward LH	0.3	63.3	-17.0	
B3307-8	Forward RH	0.3	63.3	17.0	
01-0770054-01	Aft rH	0.6	306.0	40.0	E
01-0770054-03	Aft lH	0.6	306.0	40.0	E
A2064-1683	Tail	0.2	398.6	0.0	
90-004-4	Map Light	0.6	78.0	0.0	
600W	Fire Extinguisher, Hand Type	1.6	75.0	0.0	
BHT-407-FM-1	Flight Manual	1.7	37.0	-24.0	
1431311-3	First Aid Kit	1.8	91.0	15.0	
<b>Seat Belts:</b>					
222-320-823-130	Pilot	2.2	70.0	12.0	E
222-320-823-129	Forward Passenger	2.2	70.0	-12.0	E
407-370-721-105	Mid Passenger LH	1.9	87.0	-15.0	E
407-370-721-105	Mid Passenger RH	1.9	87.0	15.0	E
407-370-720-101	Aft Passenger LH	1.9	138.0	-17.0	E
407-370-721-103	Aft Passenger Centre	1.7	138.0	0.0	E
407-370-720-101	Aft Passenger RH	1.9	138.0	17.0	E





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**Actual Weight and Balance Record - Model 407**

Date: **11-Sep-09**  
Reg. N°: **N4144C**

Serial N°: **53921**

**Equipment List - Optional Equipment Installed**

Part Number	Item Description	Weight	Long Arm	Lateral Arm	
206-706-212-131	Particle Separator	17.6	141.7	0.9	E
206-706-502-109	Rotor Brake	11.2	124.1	0.0	
407-705-602-109	Interior - Corporate	81.4	109.9	0.7	E
407-705-603-103	Soundproofing - Corporate	14.0	114.0	0.0	E
407-705-604-111	Headliner with ECS Ducts	13.7	113.7	0.0	E
407-705-605-103	Armrests - Corporate	7.2	112.7	0.3	E
407-705-702-111	Seats - Corporate Leather	93.8	101.3	1.4	E
407-706-004-101	28Ah Battery	61.3	15.8	1.0	
407-706-007-105	High Skid Gear	89.7	115.6	0.0	
407-706-011-101	Aux Tank Provisions	5.3	158.7	3.7	E
407-706-011-113	Aux Tank Installation	31.0	159.5	-1.2	E
407-706-013-101	Cockpit Stowage Kit	1.4	52.9	-22.9	E
407-706-015-101	Engine Fire Detection	2.0	135.5	2.6	E
407-706-020-103	Max Gross Weight	0.0	51.0	4.0	E
407-706-024-105	Main Rotor, Frahm/Cover	52.2	122.2	-0.7	
407-706-301-103	Sliding Windows to 407-899-086-133	12.1	123.1	0.0	
407-706-702-113	Dual Controls	12.5	48.6	-13.3	
407-326-003	FliteSteps STC SH1322SO	29.0	113.5	0.0	
	FliteSteps modified by 407-899-400-101(Egress Tool)				
407-899-086-133	Window Install. (Pass., Litter, Crew, Chin, Windshield & Skylight) includes:				
407-540-009	Crew L/H w/Slider STC SR01051AT	3.5	64.8	-26.7	
407-540-010	Crew R/H w/Slider STC SR01051AT	3.5	64.8	26.7	
407-541-009	Pass. L/H w/Slider STC SR01051AT	5.5	123.0	-28.3	
407-541-010	Pass. R/H w/Slider STC SR01051AT	5.5	123.0	28.3	
407-543-101	ChinBubble L/H STC SR01051AT	3.0	20.8	-14.3	

Note: Equipment listed above was installed when helicopter was weighed, except as indicated by (\*), or partially installed as indicated by (#)



A Textron Company

**Actual Weight and Balance Record - Model 407**

Date: 11-Sep-09

Serial N°: 53921

Reg. N°: N4144C

**Equipment List - Optional Equipment Installed**

Part Number	Item Description	Weight	Long. Arm	Lateral Arm
407-543-102	ChinBubble R/H STC SR01051AT	2.5	21.2	15.4
407-546-121	Windshield L/H STC SR01051AT	6.5	41.0	-16.0
407-546-122	Windshield R/H STC SR01051AT	6.5	41.0	16.0
407-548-003	Skylight L/H STC SR01051AT	1.0	68.3	-15.9
407-548-004	Skylight R/H STC SR01051AT	1.0	68.3	15.9
407-559-003	Litter Door L/H STC SR01051AT	2.4	92.7	-27.7
407-559-004	Fixed Panel R/H STC SR01051AT	2.4	92.7	27.7

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Date Weighed: 11-Sep-2009

Bell Model 407

Serial Number: 53921

ATA	Serial No.	Part Number	Item Description	Weight	Long Arm	Lat Arm	Reference	Manufacturer
52	NSN	206-510-214	Automatic Baggage Door Opener Kit	0.9	155.0	-21.8	STC No. SH1990SO	Aeronautical Accessories, Inc.
52	NSN	407-511-103	Automatic Crew Door Opener Kit	2.8	43.6	0.0	STC No. SH1990SO	Aeronautical Accessories, Inc.
52	NSN	407-512-103	Automatic Passenger Door Opener Kit	2.8	103.9	0.0	STC No. SH1990SO	Aeronautical Accessories, Inc.
25	NSN	407-453-101	Baggage Floor Protector Kit	4.5	176.0	0.0	STC No. SH1147SO	Aeronautical Accessories, Inc.
25	NSN	407-450-001	Cabin Floor Protector Kit	5.4	111.0	0.0	STC No. SH3289SO	Aeronautical Accessories, Inc.
25	NSN	407-450-001	Crew Floor Protector Kit	2.9	44	0.0	STC No. SH3289SO	Aeronautical Accessories, Inc.
53	1728, 1751	407-536-101/1-102	Folding Maintenance Step Assembly	4.0	145.2	0.0	STC No. SR00235AT	Aeronautical Accessories, Inc.
25	NSN	206-884-100	Headset Retention Bracket Assembly	0.1	47	0.0	STC No. SR01489AT	Aeronautical Accessories, Inc.
53	468	407-701-002	Locking Fuel Cap Kit	0.1	149.0	0.0	STC No. SH1366SO	Aeronautical Accessories, Inc.
53	2110, 2118	407-531-001	Pre-Flight Step/Handle Kit	2.0	109.0	0.0	STC No. SH1366SO	Aeronautical Accessories, Inc.
53	2075, 2077	407-531-002	Pre-Flight Step/Handle Kit	2.0	138.0	0.0	STC No. SH1366SO	Aeronautical Accessories, Inc.
25	946	407-460-001	Spacemaker	6.0	192.0	0.0	STC No. SH227WE	Aeronautical Accessories, Inc.
67	3708, 3814	206-928-200	Tail Rotor Pedal Lockout Kit	0.1	33.0	-9.0	STC No. SR00513AT	Aeronautical Accessories, Inc.
21	NSN	407EC-202-2	Vapor Cycle Air Conditioning System with dual forward evaporators	105.5	127.0	0.0	STC No. SR00222DE	Air Comm Corporation
96	002-006237	122283-10A	DC Noise Filter	0.6	16.0	-8.0	Log Book Entry	Lonestar Aviation Corporation
96	002-009067	122283-10A	DC Noise Filter	0.6	16.0	-8.0	Log Book Entry	Lonestar Aviation Corporation
96	002-009068	122283-10A	DC Noise Filter	0.6	195.0	-9.0	Log Book Entry	Lonestar Aviation Corporation
96	002-009069	122283-10A	DC Noise Filter	0.6	200.0	-9.0	Log Book Entry	Lonestar Aviation Corporation
96	002-009070	122283-10A	DC Noise Filter	0.6	200.0	-9.0	Log Book Entry	Lonestar Aviation Corporation
53	NSN	407-456-001	Baggage Compartment Edge Protector Kit	0.3	168.0	29.5	Log Book Entry	Aeronautical Accessories, Inc.
33	LSS07436	3060S	Pulse Light w/ TCAD Interface	1.0	10.0	-8.0	STC No. SA00560SE	Precise Flight, Inc.
33	47687	01-0770028-05	Strobe Power Supply (3 output)	2.1	186.0	9.0	STC No. SA800EA	Whelen Engineering Company, Inc
33	NSN	01-0770054-01	Strobe / Position Light	0.6	306.0	40.0	STC No. SA800EA	Whelen Engineering Company, Inc
33	NSN	01-0770054-03	Strobe / Position Light	0.6	306.0	-40.0	STC No. SA800EA	Whelen Engineering Company, Inc
96	M090842508	70-2420-8TAS610	TAS Processor TAS 610	5.5	163.0	6.0	Field Approval	Avidyne Safety Systems Group
96	M091245894	70-2040	TAS Antenna Coupler	0.5	71.0	14.0	Field Approval	Avidyne Safety Systems Group
96	7253	S72-1750-31L	TAS Antenna (Top)	0.7	82.0	-3.0	Field Approval	Sensor Systems, Inc.
96	7276	S72-1750-32L	TAS Antenna (Bottom)	0.8	64.0	7.0	Field Approval	Sensor Systems, Inc.
96	5-2597	3500-004	EHSI SN3500	3.0	36.0	8.0	Field Approval	Sandel Avionics, Inc.
95	F09-10840	4300-311	Attitude Indicator	2.1	35.9	7.5	Log Book Entry	Mid-Continent Instrument Co., Inc.
95	12042	9551B	Turn and Slip Indicator	0.7	37.0	11.0	Log Book Entry	United Instruments Co.
96	24000882	100-01066-00	VHF COM / NAV / GPS GNS 530AW	7.0	38.0	1.0	Log Book Entry	Garmin International, Inc.
96	34865	013-00235-00	GPS 1 Antenna GA-35	0.5	82.0	4.0	Log Book Entry	Garmin International, Inc.
96	287174	CI-175	VHF COM #1 Antenna	0.5	59.0	5.0	Log Book Entry	Comant Industries, Inc.
96	28260	DNM48-1	NAV Antenna	0.6	205.0	13.0	Log Book Entry	EDO Corporation

Notes: Equipment listed above was installed when helicopter was weighed, except as indicated by (\*) in Serial No. Column.  
EA10068-01E 3/07



Date Weighed: 11-Sep-2009

Bell Model 407

Serial Number: 53921

ATA	Serial No.	Part Number	Item Description	Weight	Long Arm	Lat Arm	Reference	Manufacturer
96	28041	DMN48-1	NAV Antenna	0.6	205.0	-13.0	Log Book Entry	EDO Corporation
96	279980	CI-507	Diplexer	0.2	33.0	4.5	Log Book Entry	Comant Industries, Inc.
96	25803356	430-6040-203	VHF COM SL-40	3.0	38.0	1.0	Log Book Entry	Garmin International, Inc.
96	273504	CI-122	VHF COM #2 Antenna	0.8	64.0	-10.0	Log Book Entry	Comant Industries, Inc.
96	84133695	011-00455-00	Transponder GTX-330	4.0	43.0	1.0	Log Book Entry	Garmin International, Inc.
96	SRN11497	SSD120-30N-RS232	Altitude Encoder	0.3	24.0	4.0	Log Book Entry	Trans-cal Industries, Inc.
96	44834	CI-101	Transponder Antenna	0.6	29.0	2.0	Log Book Entry	Comant Industries, Inc.
96	84202	066-1072-04	ADF Receiver KR-87	3.0	40.0	1.0	Log Book Entry	Honeywell International, Inc.
96	A88091	071-1234-00	ADF Antenna KA-44B	4.2	180.0	0.0	Log Book Entry	Honeywell International, Inc.
96	H04195-G04130	PMA7000B-1-2-3	Audio Panel PMA-7000	1.5	39.0	1.0	Log Book Entry	P.S. Engineering, Inc.
96	NSN	182-13019-09	Co-pilot Foot Switch Bracket	0.2	36.0	-4.0	Log Book Entry	Aeronautical Accessories, Inc.
96	NSN	M8805/55-001	Foot Switch	0.2	36.0	-4.0	Log Book Entry	Eaton Aerospace
96	170-08514	453-5003	ELT C406-1HM	4.5	191.0	5.5	Log Book Entry	Arrex Aircraft Supplies, Inc.
96	263683	110-338	ELT Antenna	0.5	225.0	0.0	Log Book Entry	Arrex Aircraft Supplies, Inc.
96	NSN	345-6196-04	ELT Remote Switch	0.1	39.0	-7.0	Log Book Entry	Arrex Aircraft Supplies, Inc.
96	NSN	130-4004	Buzzer	0.3	135.0	9.0	Log Book Entry	Arrex Aircraft Supplies, Inc.
96	54958	060-0015-00	Directional Gyro KG-102A	4.8	67.0	14.0	Log Book Entry	Honeywell International, Inc.
96	22373	071-1052-0000	Flux Valve KMT-112	0.3	216.0	0.0	Log Book Entry	Honeywell International, Inc.
96	NSN	071-4037-01	Cooling Fan KA-33	1.2	26.0	2.0	Log Book Entry	Honeywell International, Inc.

