AIRCRAFT WEIGHT AND C.G DETERMINATION

REPORT NO : 028/WB/X/2019
DATE : 05 October 2019

AIRCRAFT REGISTRATION	:	PK-SNM
AIRCRAFT TYPE	:	CESSNA C208 CARAVAN
AIRCRAFT SERIAL NUMBER	:	20800655
PROPERTY OF	:	PT. SMART CAKRAWALA AVIATION
PLACE OF WEIGHING	:	WICHITA, USA
REASON OF WEIGHING	:	RECALCULATION STC CAMERA HOLE
CONFIGURATION	:	9 PASSENGERS without Cargo Pod
PERFORMED BY	:	FEBRI HERMAWAN
		SIGNED: DATE: 05/10/2019
CHECKED BY	:	ILHAM CHAIRI
		SIGNED: DATE: 05/10/2019

RESULTS

EMPTY WEIGHT	:	4780.98 LBS
C.G ARM OF AIRPLANE	:	174.53 IN
CG PERCENT MAC %	:	25.54 (PERCENT MAC)
VALID UNTIL	:	05 OCTOBER 2024

WEIGHING EQUIPMENT

PART NUMBER	:	N/A
SERIAL NUMBER	:	N/A
VALIDATION	:	N/A

APPROVED BY:

Ilham Chairi
Chief Inspector

AIRPLANE WEIGHING FORM
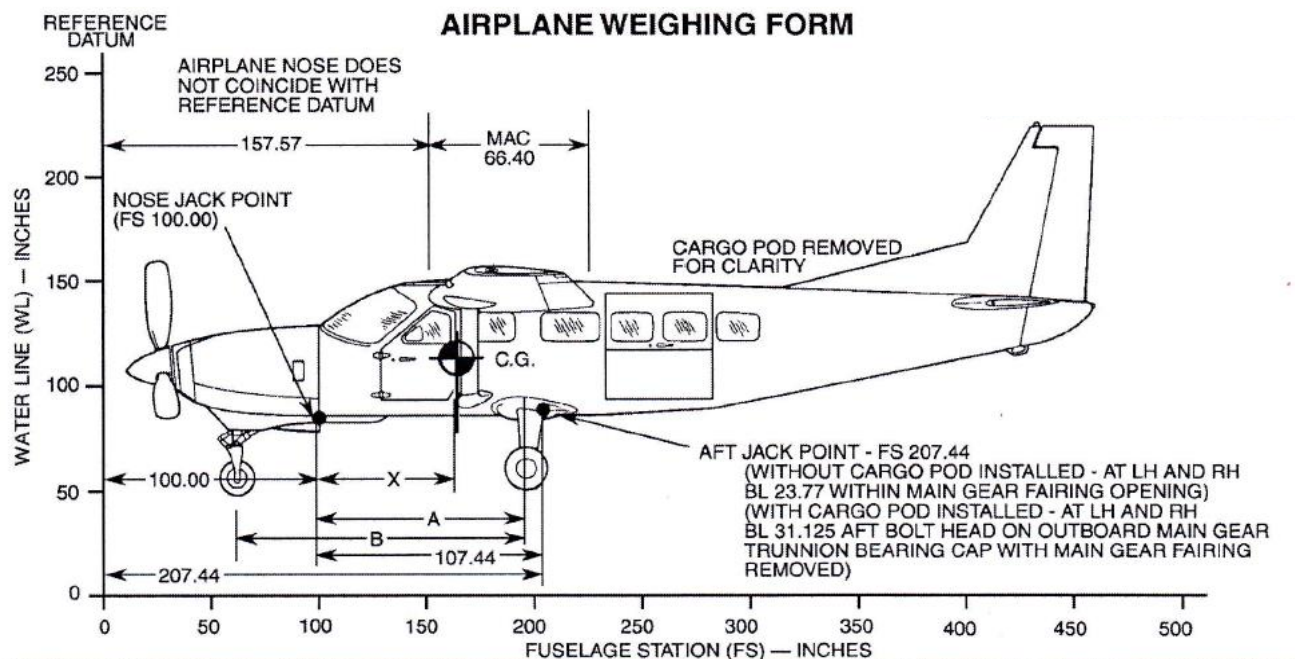
A = 96. 75 Inches

B = 137.75 Inches

AIRPLANE AS WEIGHED TABLE

POSITION	SCALE READING	SCALE DRIFT	TARE	NET WEIGHT
LEFT SIDE	2014	-	-	2009
RIGHT SIDE	2068	-	-	2075
NOSE	795	-	-	784
AIRPLANE TOTAL AS WEIGHT				4868

LOCATING CG WITH AIRPLANE ON LANDING GEAR

FORMULA for longitudinal CG

$$(X) = \frac{(A)}{96.75} - \frac{(\text{Nose Gear Net Weight}) (784) \times (B)\ 137.75}{\text{Nose and Main Landing Gear Weight Totaled (4868)}} = (74.57)\ \text{Inches}$$

CG Arm of Airplane = 100 + (X) = (**174.57**) Inches Aft Datum

MEASURING A AND B

MEASURE A AND B PER PILOT'S OPERATING HANDBOOK INSTRUCTIONS TO ASSIST IN LOCATING CG WITH AIRPLANE WEIGHED ON LANDING GEAR

LOCATING PERCENT MAC

FORMULA for Percent MAC

$$\text{CG Percent MAC} = \frac{\text{CG Arm of Airplane (174.53)} - 157.57}{0.6640}$$

= 25.54 %

LEVELING PROVISIONS

LONGITUDINAL – LEFT SIDE OF FUSELAGE AT FS 239.00 & 272.00 LATERAL – SEAT RAILS AFT OF PILOT AND FRONT PASSENGER SEATS

AIRCRAFT WEIGHT & BALANCE

TABLE 1

BASIC ITEMS NOT INCLUDED WHEN WEIGHING	WEIGHT (POUNDS)	CG ARM (INCHES)	MOMENT/1000 (INCH-POUNDS)
14392 Strain Insulator	0.43	186.20	0.08
S1971-1 Wire	0.57	290.73	0.17
AB-CES37 Restrain (QTY 2)	0.57	296.27	0.79
AB-CES36 Restrain	1.34	296.27	0.40
2612100-1 (Belt Fitting Instl)	3.88	316.49	1.23
SARM300-6LV (Tension Unit)	0.20	420.74	0.08
1270080-2 (Antenna Bracket)	0.02	472.98	0.01
1270080-1 (Antenna Bracket)	0.02	472.98	0.01
Skin Doubler	5.1	221	1.13
Cover Hole	2.1	221	0.46
Reinforcement Flange Skin	3.0	221	0.66
Camera Box	13.0	221	2.87
Flange Box	2.5	221	0.55
New Upper Covers	2.6	221	0.57
Center Seat Rail	1.6	221	0.35
TOTAL	**36.93**	**253.45**	**9.36**

TABEL 2

DESCRIPTION OF ACTION PERFORMED	WEIGHT (POUNDS)	CG ARM (INCHES)	MOMENT/1000 (INCH-POUNDS)
Cargo Pod Inst	142.85	196.62	28.09
Outer Skin	0.5	221	0.11
Center Longeron	1.0	221	0.22
Lateral Longeron	0.8	221	0.18
Upper Cover	1.3	221	0.29
Center Seat Rail	1.6	221	0.35
TOTAL	**148.05**	**197.50**	**29.24**

TABEL 3

AIRCRAFT WEIGHING REPORT	WEIGHT (POUNDS)	CG ARM (INCHES)	MOMENT/1000 (INCH-POUNDS)
AIRPLANE (CALCULATED OR AS WEIGHED) (INCLUDES ALL UNDRAINABLE FLUIDS AND FULL OIL)	4868	174.57	849.81
WEIGHT FROM TABLE 1 (+)	36.93	253.45	9.36
SUB TOTAL	4904.93	175.16	859.17
WEIGHT FROM TABLE 2 (-)	148.05	197.50	29.24
TOTAL	**4756.88**	**174.47**	**829.93**

AIRCRAFT WEIGHT & BALANCE

BASIC EMPTY WEIGHT AND CENTER OF GRAVITY TABLE

ITEM	WEIGHT (POUNDS)	CG ARM (INCHES)	MOMENT/1000 (INCH-POUNDS)
AIRPLANE (CALCULATED OR AS WEIGHED) (INCLUDES ALL UNDRAINABLE FLUIDS AND FULL OIL)	4756.88	174.47	829.93
DRAINABLE UNUSABLE FUEL AT 6.75 POUNDS PER GALLON	24.1	186.4	4.49
BASIC EMPTY WEIGHT	4780.98	174.53	834.42

PRIOR TO WEIGHT AND BALANCE CHECK

AIRCRAFT TYPE : **CESSNA C208 CARAVAN**

AIRCRAFT REGISTRATION : **PK-SNM**

DATE OF WEIGHING : **05 October 2019**

NO.	DESCRIPTION	APPL	CHECK	REMARKS
A	**STANDARD ITEMS**			
1	All fuel tank EMPTY or recorded / FULL	√	Empty	-
2	All engine oil tanks EMPTY or recorded / FULL	√	Full	-
3	All others oil tanks FULL (included Propeller, Starters, Gearbox and Air Cycle)	√	Full	-
4	Hydraulic tanks FULL	√	Full	-
B	**STANDARD EQUIPMENTS**			
1	Technical supply or Flight Kits	x	N/A	-
2	Aircraft Books, Manuals and Papers	√	1 Bag	-
3	AXE	√	1 EA	-
4	Fire Extinguisher	√	1 EA	-
5	First Aid Kit	√	1 Box	-
6	Life Vests	√	11 EA	-
7	Life Raft	x	N/A	-
8	Survival Kit	x	N/A	-