

 CZECH SPORT AIRCRAFT	SAFETY ALERT / SAFETY DIRECTIVE	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com
No. SA-SC-010		Rev.: -
Date: 2018-12-20		
Page: 1 of 13		Date: -

MODEL AFFECTED:	SportCruiser / PiperSport (except the aircraft under EASA Permanent Flight Conditions).
SUBJECT:	Warning on change of Centre of Gravity operating rear limit from original 38% or 36% to 35% of MAC.
AIRCRAFT AFFECTED:	All SportCruiser / PiperSport airplanes from section "MODEL AFFECTED" with the Centre of Gravity operating rear limit originally stipulated at 38% or 36% of MAC in the respective airplanes' Pilot Operating Handbook (POH).
COMPLIANCE:	Execution of this Safety Alert is mandatory and must be performed immediately. Instructions contained herein, if not followed, may lead to unsafe conditions, resulting in possible personal injuries.

DESCRIPTION:

The originally established Centre of Gravity operating rear limit of 38% or 36% (570 mm / 22,44 inch or 540 mm / 21,26 inch) must be changed to 35% of MAC (525 mm / 20,67 inch). This change is made in order to improve safety of the aircraft operation.

Information and instructions contained in this Safety Alert become effective and mandatory immediately and it is on the pilots' and owners' full responsibility to secure that all the instructions are followed immediately after this Safety Alert issue.

The updated POH pages for the aircraft affected by this Safety Alert will be provided through a Service Bulletin that will be issued by the aircraft OEM.

AUTHORISATION TO PERFORM:

Owner / pilot

REASON:

The change was made to improve safety of the aircraft operation.

MANPOWER:

N/A

SPECIAL TOOLS:

N/A

WEIGHT AND BALANCE:

Affected

ELECTRICAL LOAD DATA:

N/A

REFERENCES:

N/A

PUBLICATIONS AFFECTED:

POH

 CZECH SPORT AIRCRAFT	SAFETY ALERT / SAFETY DIRECTIVE	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com
No. SA-SC-010		Rev.: -
Date: 2018-12-20		Date: -
Page: 2 of 13		

MATERIAL:

N/A

COSTS:

N/A

ACCOMPLISHMENT INSTRUCTIONS:

- A. **Read this Safety Alert thoroughly and then strictly follow all the instructions contained therein during the aircraft operation** (*Airplane weighing procedure and instructions for determination of current operation weight and C.G position are shown herein below*).
- B. **Enter the aircraft log book and insert the following text: "Center of Gravity operating rear limit was changed. The new and only valid Center of Gravity operating rear limit is 35% of MAC (525 mm / 20,67 inch)"**.
- C. **Performance of this Safety Alert shall be thereby completed.**

 CZECH SPORT AIRCRAFT	SAFETY ALERT / SAFETY DIRECTIVE	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com
No. SA-SC-010		Rev.: -
Date: 2018-12-20		Date: -
Page: 3 of 13		

1 Airplane weighing procedure

1.1 Preparation

- Remove all impurities from the aircraft as well as further undesirable objects.
- Inflate tires to recommended operating pressure.
- Drain fuel from fuel installation.
- Add oil, hydraulic and cooling liquid up to the maximum specified value.
- Retract wing flaps, close the canopy and other lids and covers, remove control surfaces blocking.
- Level the airplane according to the rivet line located on the fuselage (on LH and RH sides) under the canopy frame.

1.2 Levelling

- Place scales under each wheel.
- Deflate the nose tire to lower or insert a pad under the nose tire to lift the nose to properly center the bubble in the level.

1.3 Weighing

- With the airplane level and brakes released, record the weight shown on each scale. Deduct the tare, if any, from each reading.

1.4 Measuring

- For better understanding, see Figure "Weight and balance C.G. layout" below
- The DATUM (reference plane) for arms measuring is on the wing leading edge Rib No.4.
- Obtain measurement LR and LL by measuring horizontally (along the airplane center line) from a line stretched between datum on the left and right wing.
- Obtain measurement LN by measuring horizontally and parallel to the airplane center line, from center of nose wheel axle left sides, to the datum on the left wing. Repeat on right side and average the measurements.

1.5 Weights and measurements

- Use the weights from item 1.3 and the measurements from item 1.4 and write the figures into the "Aircraft empty weight C.G. determination table", see below.

1.6 Aircraft empty weight and C.G. calculation

- With the help of the formulas below calculate aircraft empty weight and C.G.

 CZECH SPORT AIRCRAFT	<h2>SAFETY ALERT / SAFETY DIRECTIVE</h2>	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com
No. SA-SC-010		Rev.: -
Date: 2018-12-20		
Page: 4 of 13		Date: -

2 Operating weights and loading

2.1 Weights:

Max. take-off weight	600kg	1,320 lb
Max landing weight	600 kg	1,320 lb
Max. weight of fuel	82kg	180 lb
Max. baggage weight in rear fuselage	18 kg	40 lb
Max. baggage weight in each wing locker	20 kg	44 lb
Maximum permissible empty weight	408.4 kg	900.4 lb

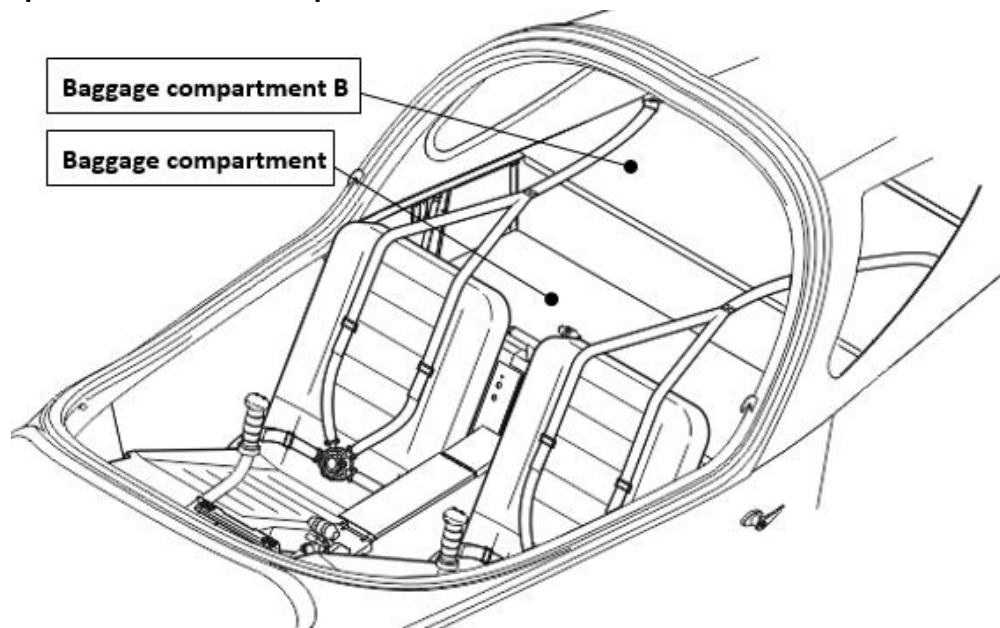
2.2 Crew:

Number of seats	2	
Minimum crew (<i>only on the left seat</i>)	1 pilot	
Minimum crew weight	55 kg	121 lb
Maximum crew weight on each seat	115 kg	253 lb

2.3 Arms:

Pilot/Passenger	700 mm	27.56 in
Baggage compartment	1,310 mm	51.58 in
Wing lockers	600 mm	23.62 in
Fuel tanks	180 mm	7.09 in

3 Baggage compartments in the cockpit



CAUTION: Use of the upper part of the baggage compartment (i.e. of the Baggage compartment B) is prohibited.

 CZECH SPORT AIRCRAFT	SAFETY ALERT / SAFETY DIRECTIVE	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com
		Rev.: -
		Date: -
		No. SA-SC-010
Date: 2018-12-20		
Page: 5 of 13		

4 Aircraft C.G. determination

4.1 Aircraft Empty weight C.G. determination

- 4.1.1 Weigh the aircraft according to the Airplane weighing procedure shown above.
- 4.1.2 Record weight and arm values in the Aircraft empty weight C.G. table, nose wheel arm is negative (-).
- 4.1.3 Calculate and record moment for each of the main and nose wheels using the following formula:

$$MOMENT (lb\ in) = WEIGHT (lb) \times ARM (in)$$

- 4.1.4 Calculate and record total weight and moment.
- 4.1.5 Determine and record empty weight C.G. using the following formula:

$$AIRCRAFT\ EMPTY\ WEIGHT\ C.G. = \frac{M_{TE}}{W_{TE}} (in) \times \frac{100}{MAC} (\% \text{ of } MAC)$$

Aircraft empty weight C.G. determination table

AIRCRAFT EMPTY C.G.	ITEM	WEIGHT <i>lb</i>	ARM <i>in</i>	MOMENT <i>lb in</i>
	RIGHT MAIN WHEEL	$W_R =$	$L_R =$	
	LEFT MAIN WHEEL	$W_L =$	$L_L =$	
	NOSE WHEEL	$W_N =$	$L_N = -$ <i>negative arm</i>	-
	TOTAL	Empty weight: $W_{TE} =$	C.G. = <i>in</i> <i>% MAC</i>	Aircraft moment: $M_{TE} =$

Note:

Insert the filled-out and calculated form into the POH and use it for future calculations during aircraft operation.

 CZECH SPORT AIRCRAFT	SAFETY ALERT / SAFETY DIRECTIVE	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com
		No. SA-SC-010
		Date: 2018-12-20
Page: 6 of 13		Rev.: -
		Date: -

4.2 Aircraft Loading and C.G. check

Before flight it is important to determine that the aircraft is loaded in such a way so that its weight and C.G. location are within the allowable limits.

CAUTION:

Due to an unfavourable effect on the rear C.G. position, the use of the upper part of the baggage compartment in the cockpit (i.e. of the baggage compartment B) is prohibited. Do not use it any more. See the picture in the point 3 above.

- 4.2.1 Record actual empty weight, arm and moment into the table.
- 4.2.2 Record weights of pilot, passenger, baggage and fuel to the table.
- 4.2.3 Calculate and record moment for each item using the following formula:

$$MOMENT (lb\ in) = WEIGHT (lb) \times ARM (in)$$

- 4.2.4 Calculate and record the total weight and moment.
- 4.2.5 Determine and record the aircraft's C.G. using the following formula:

$$AIRCRAFT\ C.G. = \frac{M_T}{W_T} (in) \times \frac{100}{MAC} (\% \text{ of } MAC)$$

- 4.2.6 If loading or C.G. calculation results exceed the maximum permitted values, reduce baggage or fuel weight and repeat calculation.
- 4.2.7 It is important to perform also the loading and the C.G. check without fuel (in case of total fuel depletion at flight) – the most rearward C.G. check.

Aircraft Loading and C.G. check table

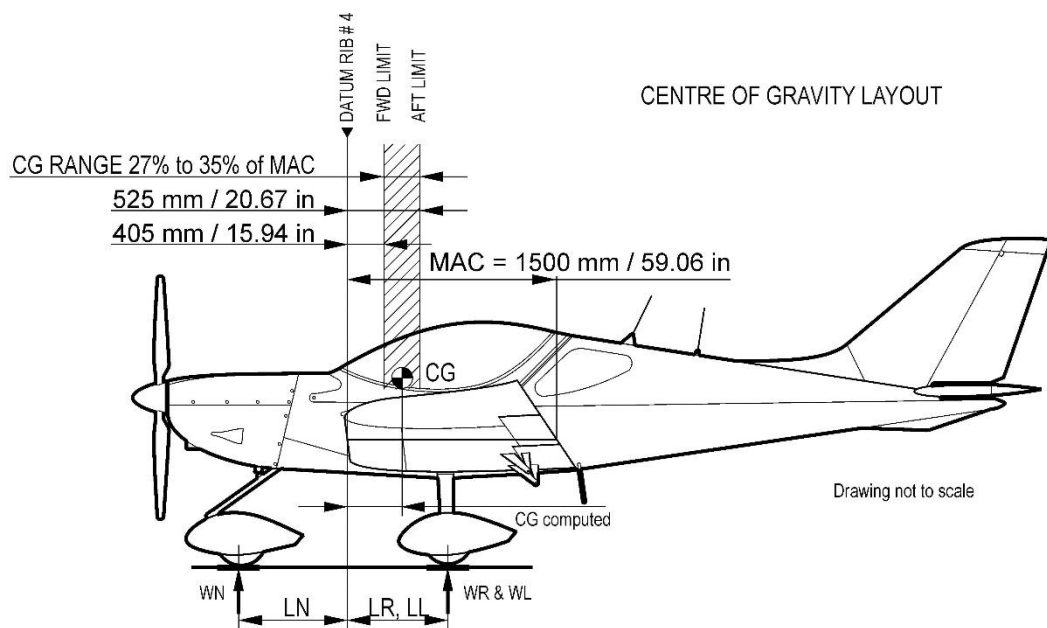
ITEM	WEIGHT lb	ARM in	MOMENT lb in
EMPTY AIRCRAFT			
PILOT		27.56	
PASSENGER		27.56	
BAGGAGE COMPARTMENT		51.58	
WING LOCKERS		23.62	
FUEL TANKS		7.09	
TOTAL	$W_T =$	$C.G. =$ in % MAC	$M_T =$

 CZECH SPORT AIRCRAFT	<h1>SAFETY ALERT / SAFETY DIRECTIVE</h1>	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com	
		No. SA-SC-010	Rev.: -
		Date: 2018-12-20	Date: -
Page: 7 of 13			

5 Forms for Weight and Balance calculation

5.1 Forms valid for the SportCruiser and the PiperSport aircraft produced within 2007 – 2011 (except the aircraft under EASA PFC rules)

Weight and balance C.G. layout



C.G. range and determination

Aircraft operating C.G. range:

27 to 35 % of MAC

405 to 525 mm of MAC

15.94 to 20.67 in of MAC

 CZECH SPORT AIRCRAFT	SAFETY ALERT / SAFETY DIRECTIVE	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com
		Rev.: -
		Date: -
		No. SA-SC-010
Date: 2018-12-20		
Page: 8 of 13		

Blank form of Aircraft Empty weight and C.G. determination table

Aircraft Empty weight and C.G. determination table

	ITEM	WEIGHT <i>lb</i>	ARM <i>in</i>	MOMENT <i>lb in</i>
AIRCRAFT EMPTY C.G.	RIGHT MAIN WHEEL	$W_R =$	$L_R =$	
	LEFT MAIN WHEEL	$W_L =$	$L_L =$	
	NOSE WHEEL	$W_N =$	$L_N = -$ <i>negative arm</i>	-
	TOTAL	Empty weight: $W_{TE} =$	C.G. = <i>in</i> <i>% MAC</i>	Aircraft moment: $M_{TE} =$

NOTE: Empty weight is including oil, coolant, hydraulic fluid and unusable fuel.
Nose wheel moment is negative (-).

MAC: 59.06 in

MOMENT (lb in) = **WEIGHT** (lb) x **ARM** (in)

$$\text{AIRCRAFT EMPTY WEIGHT C.G.} = \frac{M_{TE}}{W_{TE}} \text{ (in)} \times \frac{100}{\text{MAC}} \text{ (\% of MAC)}$$

Registration:
Serial No.:
Date:
By:

Note:

Insert the filled-out and calculated form into the POH and use it for future calculations during aircraft operation.

 CZECH SPORT AIRCRAFT	SAFETY ALERT / SAFETY DIRECTIVE	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com
		Rev.: -
		Date: -
		No. SA-SC-010
Date: 2018-12-20		
Page: 9 of 13		

Blank form of Aircraft Loading and C.G. check table

Aircraft Loading and C.G. check table

ITEM	WEIGHT lb	ARM in	MOMENT lb in
EMPTY AIRCRAFT			
PILOT		27.56	
PASSENGER		27.56	
BAGGAGE COMPARTMENT		51.58	
WING LOCKERS		23.62	
FUEL TANKS		7.09	
TOTAL	$W_T =$	C.G. = in % MAC	$M_T =$

CAUTION:

Due to an unfavourable effect on the rear C.G. position, the use of the upper part of the baggage compartment in the cockpit (i.e. of the baggage compartment B) is prohibited. Do not use it any more. See the picture in the point 3 above.

Operating C.G. range: 15.94 to 20.67 in / 27 to 35 % of MAC

MAC: 59.06 in

MOMENT (lb in) = WEIGHT (lb) \times ARM (in)

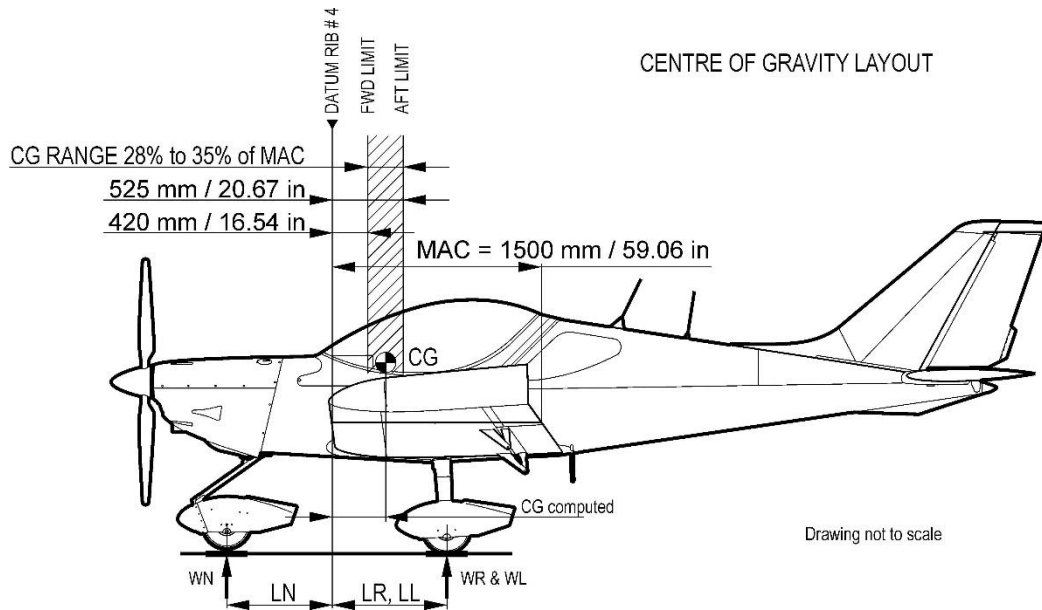
$$\text{AIRCRAFT C.G.} = \frac{M_T}{W_T} \text{ (in)} \times \frac{100}{\text{MAC}} \text{ (\% of MAC)}$$

Registration:
Serial No.:
Date:
By:

 CZECH SPORT AIRCRAFT	SAFETY ALERT / SAFETY DIRECTIVE	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com	
		No. SA-SC-010	Rev.: -
		Date: 2018-12-20	Date: -
Page: 10 of 13			

5.2 Forms valid for the SportCruiser Aircraft - S/N P1102012, P1102014, P1102016, P1102019

Weight and balance C.G. layout



C.G. range and determination

Aircraft operating C.G. range:

28 to 35 % of MAC

420 to 525 mm of MAC

16.54 to 20.67 in of MAC

 CZECH SPORT AIRCRAFT	<h2 style="margin: 0;">SAFETY ALERT / SAFETY DIRECTIVE</h2>	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com
No. SA-SC-010		Rev.: -
Date: 2018-12-20		
Page: 11 of 13		Date: -

Blank form of aircraft Empty weight and C.G. determination table

Aircraft Empty weight and C.G. determination table

AIRCRAFT EMPTY C.G.	ITEM	WEIGHT <i>lb</i>	ARM <i>in</i>	MOMENT <i>lb in</i>
	RIGHT MAIN WHEEL	$W_R =$	$L_R =$	
	LEFT MAIN WHEEL	$W_L =$	$L_L =$	
	NOSE WHEEL	$W_N =$	$L_N = -$ <i>negative arm</i>	-
	TOTAL	Empty weight: $W_{TE} =$	C.G. = <i>in</i> % MAC	Aircraft moment: $M_{TE} =$

NOTE: Empty weight is including oil, coolant, hydraulic fluid and unusable fuel.
Nose wheel moment is negative (-).

MAC: 59.06 in

MOMENT (*lb in*) = WEIGHT (*lb*) x ARM (*in*)

$$\text{AIRCRAFT EMPTY WEIGHT C.G.} = \frac{M_{TE}}{W_{TE}} \text{ (in)} \times \frac{100}{\text{MAC}} \text{ (\% of MAC)}$$

Registration:
Serial No.:
Date:
By:

Note:

Insert the filled-out and calculated form in the POH and use it for future calculations in operation.

 CZECH SPORT AIRCRAFT	SAFETY ALERT / SAFETY DIRECTIVE	Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com
		Rev.: -
		Date: -
		No. SA-SC-010
Date: 2018-12-20		
Page: 12 of 13		

Blank form of Aircraft Loading and C.G. check table

Aircraft Loading and C.G. check table

ITEM	WEIGHT lb	ARM in	MOMENT lb in
EMPTY AIRCRAFT			
PILOT		27.56	
PASSENGER		27.56	
BAGGAGE COMPARTMENT		51.58	
WING LOCKERS		23.62	
FUEL TANKS		7.09	
TOTAL	W_T=	C.G. = in % MAC	M_T=

CAUTION:

Due to an unfavourable effect on the rear C.G. position, the use of the upper part of the baggage compartment in the cockpit (i.e. of the baggage compartment B) is prohibited. Do not use it any more. See the picture in the point 3 above.

Operating C.G. range: 16.54 to 20.67 in / 28 to 35 % of MAC

MAC: 59.06 in

MOMENT (lb in) = WEIGHT (lb) x ARM (in)

$$\text{AIRCRAFT C.G.} = \frac{M_T}{W_T} \text{ (in)} \times \frac{100}{\text{MAC}} \text{ (\% of MAC)}$$

Registration:
Serial No.:
Date:
By:

 <p>CZECH SPORT AIRCRAFT</p>	<h2>SAFETY ALERT / SAFETY DIRECTIVE</h2>	<p>Czech Sport Aircraft a.s. Na Záhonech 212, 686 04 Kunovice Czech Republic office@czechsportaircraft.com</p>
<p>No. SA-SC-010</p>		<p>Rev.: -</p>
<p>Date: 2018-12-20</p> <p>Page: 13 of 13</p>		<p>Date: -</p>

APPROVAL:

This Safety Alert was approved by:

Title	Head of the Design Organisation	Airworthiness Manager
Name	Jiří Konečný	Miroslav Koukal
Hand written signature		