– English Translation –

Notification of The Civil Aviation Authority of Thailand on Rules, Procedures and Time Periods for Aircraft Weight and Balance B.E. 2566

By virtue of Article 7 of the Requirement of The Civil Aviation Authority of Thailand, Number 43, regarding the rules and procedures for the issuance and renewal of a Certificate of Airworthiness that requires the applicant to perform an aircraft weight and balance, and prepare a weight and balance report in accordance with the rules, procedures and time periods as specified by the Director.

The Director of The Civil Aviation Authority of Thailand hereby specifies the rules, procedures and time periods for aircraft weight and balance as follows:

Clause 1 This notification shall be called "Notification of the Civil Aviation Authority of Thailand on Rules, Procedures, and Time Periods for Aircraft Weight and Balance B.E. 2566".

Clause 2 This notification shall come into force from the announcement date onwards.

Clause 3 The announcement of the Department of Aviation regarding the requirement on aircraft weighing, dated 8 September B.E. 2543, shall be repealed.

Clause 4 In this notification
"Aircraft Weight and Balance" means weighing and balance setting of the aircraft.

"Maximum Take-off Mass" means a maximum take-off mass of the aircraft as specified in the manufacturer's manual.

"Maximum Landing Mass" means a maximum landing mass of the aircraft as specified in the manufacturer's manual.

"Empty Mass" means the mass of an aircraft in its empty state as specified in the aircraft's manual, including the equipment required and installed on the aircraft.

"Basic Weight" means total weight of the aircraft including total weight of all basic equipment, unusable fuel, unusable oil, total amount of engine coolant and total amount of hydraulic fluid but it does not include the usable fuel weight, payload, drainable oil and weight of passengers and crew.

"Centre of Gravity" means the point at which the aircraft is balanced if it is to be suspended in that position.

"Authorised Person" means an aircraft maintenance engineer or a person appointed by a CAAT approved repair station who is trained and has the ability to perform an aircraft weight and balance.

"Director" means the Director of The Civil Aviation Authority of Thailand.

Clause 5 The applicant for issuance or renewal of a certificate of airworthiness shall perform an aircraft weight and balance, and prepare a weight and balance report in accordance with rules, procedures and time periods according to this Notification unless

(1) The aircraft has had a weight and balance performed prior to importation into Thailand and if there have been any changes to the aircraft that affect its weight, the changes in weight have been computed and accurately and completely recorded in the aircraft weight and balance report prior to importation into Thailand.

(2) The aircraft is a new factory-built aircraft, and a weight and balance has already been performed on the aircraft by the manufacturer and this does not exceed the specified time period in Article 6.

Clause 6 An aircraft weight and balance shall be performed according to the time periods (Periodic Determination of Mass) as follows:

(1) For aircraft with a maximum takeoff mass exceeding 5,700 kg an aircraft weight and balance shall be performed within 2 years after the date of manufacture and thereafter at intervals not exceeding 5 years.

(2) For aircraft with a maximum takeoff mass not exceeding 5,700 kg an aircraft weight and balance shall be performed within 5 years after the date of manufacture and thereafter at intervals not exceeding 5 years.

Clause 7 In addition to an aircraft weight and balance according to the Periodic Determination of Mass as specified in Article 6, an aircraft weight and balance shall be performed in the following cases:

(1) For an aeroplane, when the empty weight has been changed by more than 0.5% of the maximum landing weight or where the basic centre of gravity position has changed by more than 0.5% of the mean aerodynamic chord (MAC).

(2) For a helicopter, when the empty weight has changed by more than 1% of the maximum total weight or where the basic centre of gravity position has changed by more than 0.5 inch or 10% of the maximum permissible centre of gravity range whichever is less.

Clause 8 An aircraft weight and balance shall be carried out in accordance with the following rules and procedures.

(1) Aircraft weight and balance shall be performed in accordance with the manual or instructions for that aircraft and under the supervision of an authorised person.

(2) The aircraft shall be in a suitable condition as determined by the authorised person.

(3) Aircraft weight and balance equipment shall be tested and have been certified within a period not exceeding 1 year by an accredited testing and calibrating organisation. The accuracy of the tool shall not exceed the limits specified in the manual of the said tool. Accuracy +/-2% of the applied load or +/-2 kg, whichever is greater, and the deviation for repeatability measurement shall not be more than 0.05% of the applied load.

(4) The person who performed the aircraft weight and balance shall be trained for using weight and balance equipment to ensure safety and accurate results.

(5) When weight and balance is performed on an aircraft, the condition of the aircraft, the equipment, the position of movable items and other items of load such as oil and fuel in tanks shall be recorded. The equipment installed at the time of the weight and balance shall not differ from that in the declared Basic Equipment List.

(6) An aircraft weight and balance shall be performed twice independently with the aircraft longitudinal datum horizontal. Any discrepancy in the two weighings shall not exceed 0.2% of the gross weight or 10 kg whichever is greater. If this tolerance is exceeded, further weighing shall be performed until the results between two consecutive weighings are within the tolerance.

Clause 9 An aircraft Weight and Balance report shall be made and signed by an authorised person. This report shall contain the statement "Used in place of the previous report" and the following information:

(1) Aircraft weight and balance reference number and performing date
(2) Type and model of the aircraft and its nationality and registration mark
(3) Copies of the record of each weighing according to Article 8 (6)
(4) Basic weight report certified by an authorised person specified in Article 10
(5) Variable load
(6) Table and Reference Line setting used for Weight, Load, Moment Arm Length from Reference Line to the point where the weight falls by including the position of the frame number.
(7) The lever arm of the centre of gravity of fuel and oil in each tank including the variation of the lever arm with the quantity loaded if this variation is significant. The lever arm of the centre of gravity of an occupant of each seat. The lever arm of each compartment or area in the aircraft where disposable loads, such as luggage or freight, may be placed.
(8) Any significant change in the centre of gravity of the aircraft (change in moment) which will result in a change in configuration, such as the retraction and extension of the landing gear.

An example of a Weight and Balance Report form is in Appendix A of this Notification.

Clause 10 The Basic Weight Report certified by an authorised person shall include at least the following information:

(1) Basic weight
(2) Centre of gravity
(3) The position of landing gear (retracted or extended). However, this information is not required for an aircraft without a Type Certificate.
(4) List of installed equipment. However, this information is not required for an aircraft without a Type Certificate.
(5) Level arm of each installed equipment.
(6) Aircraft weight and balance reference number and performing date.

An example of a Basic Weight Report form is in Appendix B of this Notification.

Clause 11 A Certificate of Airworthiness holder shall maintain the aircraft weight and balance report together with the aircraft maintenance records of that aircraft and keep a copy onboard the aircraft.

Clause 12 A Certificate of Airworthiness holder shall record the date of the aircraft weight and balance in the aircraft logbook.

Announced on 26 October B.E. 2566 (2023)

Suttipong Kongpool
Director General
The Civil Aviation Authority of Thailand

Appendix A
An example of Weight and Balance Report form

SPECIMEN WEIGHT AND BALANCE REPORT	
Reference Number	CAAT/WBR/123
Date of Issue	1 January 1989
Produced by	Thai Aviation Ltd.
Aircraft Type and Model	CAAT 123
Nationality and Registration Marks	HS-123
Manufacturer	CAAT
Manufacturer's Serial Number	33
Maximum Total Weight Authorized	3320 kg
Center of Gravity Limits	Refer to Flight Manual reference number FM/345

PART A – BASIC WEIGHT	
The basic weight of the aircraft as derived in the Basic Weight Schedule CAAT/BWS/246 dated 31 December 1988 is	2500 kg
The center of gravity of the aircraft in the same condition at this weight and with the landing gear extended is	127 in. aft of datum
The total moment about the datum in this condition in kg-in/100 is	3175
Note	
(1)	**The datum is at fuselage station 0 situated 114 inches forward of the wing leading edge. This is the datum defined in the Flight Manual. All lever arms are distances in inches aft of datum.**
(2)	**The basic weight includes the weight of 11 kg unusable fuel and 2.2 kg unusable oil.**

PAT B – VARIABLE LOAD

The weight, lever arm and moment of items Of Variable Load are shown below. The Variable Load depends upon the equipment carried for the particular role.

Item	Weight kg	Lever Arm inches	Moment Kg-inches/100
Pilot (one)	-	108	-
De-icing fluid 11/2 gallon	5.5	140	8
Life-jackets (7)	6.4	135	9
Row 1 passenger seats (two)	27.2	173	47
Row 2 passenger seats (two)	27.2	215	58
Row 3 passenger seats (two)	27.2	248	68

Table	3.6	256	9
One stretcher and attachments (in place of seats rows 2 and 3)	20.5	223	46
Medical Stores	6.8	250	17

PAT C – LOADING INFORMATION (DISPOSABLE LOAD)

The total moment changes when the landing gear is retracted if 8.2 kg-in/100. The appropriate lever arms are:

Item	Weight kg	Lever Arm inches	Capacity Imp.Gallon
Fuel in tanks 1 and 2	620*	145	190
Engine oil	23*	70	5.6
Forward baggage		21	
Rear baggage		261	
Passengers in row 1 seats		171	
Passengers in row 2 seats		213	
Passengers in row 3 seats		246	
Patient in stretcher		223	

Fuel density 3.26 kg/gal and oil density 4.1 kg/gal

It is a requirement that the pilot satisfies himself before take-off that the load is of such a weight, and is so distributed and secured, that it may safely be carried on the intended flight.

Note: To obtain the total load weight of aircraft, add to the Basic Weight the weights of the Variable and Disposable Load items to be carried for the particular role.

This Report prepared on____(date)____and supersedes all previous issues

Name and Designation _____

Signed: _____

On behalf of: _____

Appendix B
An example of Basic Weight Report form

SPECIMEN BASIC WEIGHT SCHEDULE	
Reference Number	CAAT/BWS/246
Date of Issue	31 December 1988
Aircraft Type and Model	CAAT 123
Nationality and Registration Marks	HS-123
Aircraft Serial Number	33

COMPUTATION OF BASIC WEIGHT AND CENTER-OF GRAVITY POSITION			
Description	**Weight**	**Arm**	**Moment (kg-in)**
Aircraft weight as per weighing report WR/789 dated 30 December	2475	126	311850
Total of items weighted but not part of Basic Equipment (listed to be given)	-25	-	-650
Total of Basic Equipment items not weighed (list to be given)	+50	-	+5000
Basic Weight	2500	127	317500
Note:	**The datum is at fuselage station 0 situated 114 inches forward of the wing leading edge. This is the datum defined in the Flight Manual. All lever arms are distances in inches aft of datum.**		

Current Basic Equipment List (may be given on separate sheets and attached to Schedule)		
Item	**Weight (kg)**	**Arm (in)**
Two Marzell propeller type BL-H3Z30	57.6 each	76
Two engine driven 100 ampere alternative type GE-361	12.2 each	117
One 13 AH Ni-Cd battery CB-7	14	153
Etc	etc	etc

This Schedule was prepared on_____(date)_____and supersedes all previous issues

Name and Designation _____

Signed: _____

On behalf of: _____