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GCAA
ADVISORY CIRCULAR

PERSONNEL LICENCING
AC NO: GCAA AC/PEL-007-R1

**SUBJECT: AIRCRAFT MAINTENANCE
ENGINEER LICENCE -
CLASSIFICATION CHANGES**

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Safety Regulation

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1. PURPOSE

- 1.1 This Advisory Circular (AC) provides information and guidance concerning an acceptable means of compliance with the civil aviation act and enabling regulations regarding aircraft maintenance engineer (AME) Licence designations and scope.
- 1.2 In keeping with its programme to make its procedures and systems more user-friendly, while maintaining ICAO compliance, the Guyana Civil Aviation Authority (the Authority) has revised its aircraft maintenance engineer's licence designations and scope, effective February 1, 2019.
- 1.3 The two major changes were the issuing of a single "**Aircraft**" type rating in a Licence, instead of separate "**Airframe**" and "**Power Plant**" ratings, and an "**Avionics**" rating instead of a multiplicity of "**Electrical, Radio, Auto Pilot, Compass, and Instrument**" ratings. The new categories of licences remain in conformity with ICAO Annex 1, Chapter 4, Paragraph 4.2.2.2 (a) (1) for Aircraft and 4.2.2.2 (a) (3) for Avionics Systems. The AME licence examination is based on the syllabus published in ICAO Document 7192D1, which is the syllabus that shall be generally followed by all AME training institutions in Guyana.

2. AUDIENCE

- 2.1 Aircraft Maintenance Engineer Training Schools (AMETS) certified to operate in Guyana.
- 2.2 Holders of Aircraft Maintenance Engineer Licence (AMEL) issued by the Authority.
- 2.3 Students of AMETS.
- 2.4 Holders of foreign AMEL who wish to validate, convert or attain a Guyana AMEL.
- 2.5 Any other interested person(s).

3. CANCELLATION

- 3.1 This Advisory Circular is a revised version and effectively cancels Advisory Circular No. GCAA AC/PEL-007 dated February 1, 2019.

4. EFFECTIVE DATE

- 4.1 This Advisory Circular takes effect from September 15, 2019 and until revised or cancelled by the Director General Guyana Civil Aviation Authority.

5. CHANGES TO LICENSING STANDARDS

- 5.1 The changes described in this Advisory Circular under paragraph 1.3 were introduced progressively starting February 1, 2019 with new licences being issued and with old licences being renewed. All current licenses and licence categories continue to remain valid until otherwise advised.

6. CONTACT INFORMATION

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7. AMEL CATEGORY

- 7.1 The Categories for AME licences, effective February 1, 2019 and the changes effected by this revision July 29, 2019, are as follows:

7.1.1 **"M1"** - When endorsed with the applicable Type or Group Rating on the verso of the licence, the licence authorises the holder to sign a Certificate of Release to Service (CRS) for unpressurised, piston-engine powered **AEROPLANES**, including the installed power plants, with a maximum certificated take-off mass (MCTOM) of five thousand and seven hundred (5,700) kilograms or less.

7.1.2 **"M2"** - When endorsed with the applicable Type Rating on the verso of the licence, the licence authorises the holder to sign a Certificate of Release to Service (CRS) for pressurised aeroplanes, turbine powered **AEROPLANES**, and aeroplanes of more than five thousand and seven hundred (5,700) kilograms MCTOM, including the installed power plants.

7.1.3 **"M"** - Aeroplanes (all) and their installed power plants when endorsed with the applicable type or group rating.

Note: When endorsed with this licence category, the "M" category includes the privileges of both "M1" and "M2".

7.1.4 **"R1"** - This endorsement on the verso of the licence authorises the holder to sign a Certificate of Release to Service (CRS) for **ALL** piston-engine powered **ROTORCRAFT** where the MCTOM is three thousand, one hundred and seventy-five (3,175) kilograms or less and when endorsed with the applicable type or group rating.

7.1.5 **"R2"** - When endorsed with the applicable Type Rating on the verso of the licence, the licence authorises the holder to sign a Certificate of Release to Service (CRS) for a turbine-engine **ROTORCRAFT**, or a rotorcraft with an MCTOM greater than three thousand, one hundred and seventy-five (3,175) kilograms.

7.1.6 **"R"** – Rotorcraft (all) and their installed power plants when endorsed with the applicable type or group rating.

Note: When endorsed with this licence category, the "R" category includes the privileges of both "R1" and "R2".

7.1.7 **"E1"** - This endorsement, on the verso of the licence, authorises the holder to sign a Certificate of Release to Service (CRS) for Avionics Systems (*Electrics, Radio, Instruments, and Auto Pilot, but excluding inertial navigation and flight management systems*), installed on all aircraft of five thousand and seven hundred (5,700) kilograms or less MCTOM.

7.1.8 **"E2"** - When endorsed with this Rating on the verso of the licence, the licence authorises the holder to sign a Certificate of Release to Service (CRS) for Avionics Systems installed on all aircraft of five thousand and seven hundred (5,700) kilograms or less MCTOM, and on aircraft with an MCTOM of more than five thousand and seven hundred (5,700) kilograms where **the holder has satisfactorily completed type endorsement training on the aircraft type being certified.**

7.1.9 **"E"** – Avionics Systems, including those on aircraft with an MCTOM of over 5700 kgs when type trained on the aircraft.

Note: When endorsed with this licence category, the "E" category includes the privileges of both "E1" and "E2".

8. RATINGS

8.1 A type rating may be issued for a type of aircraft and its installed power plant, using the ICAO identifier code (**Ref. ICAO Doc 8643**), such as **"C172"** for a Cessna Model 172 aeroplane, or **"R22"** for a Robinson Model R22 Helicopter.

8.2 An applicant for a type rating on an **"M2"** or **"R2"** category must provide proof that he/she has satisfactorily completed an approved **"ATA 104 Level III"** standard type endorsement course on the applicable aircraft.

8.3 A group rating may be issued for a group of similar or related aircraft (or power plants) such as **"All Single piston-engine powered aeroplanes of 2730 kg or less MCTOM"**, or **"All piston-engine powered aeroplanes of 5700 kg or less MCTOM"**, depending on the experience level of the applicant and at the discretion of the Authority.

8.4 A **"Direct Reading Compass"** rating may be endorsed on any type-rated **"M"** licence or on any **"E"** licence, where the holder has met the applicable training and experience requirements.

9. RESTRICTIONS/LIMITATIONS

9.1 A person may be issued a licence with a restriction or limitation where the person has only partially completed the requirement for the applicable category. An example is an applicant who has satisfied the airframe requirements for an **"M1"** licence (unpressurised airframe) and the engine requirements for the issue of a type rating on a **"C208"** aircraft, which is turbine powered and therefore in the **"M2"** category but is not a pressurised aircraft. That person would then be issued a Licence with a restriction as follows:

9.1.1 Category **"M"** (*Restricted to unpressurised aircraft only.*)

9.1.2 Type Rating - **"C208"**.

10. AMEL CATEGORIES – AIRCRAFT APPLICABILITY (EXAMPLES)

AIRCRAFT MODEL	AIRFRAME	POWER PLANT	AVIONICS SYSTEM LICENCE CATEGORY	AIRCRAFT LICENCE CATEGORY
Cessna C150	U	Piston	E1	M1
Cessna C172	U	Piston	E1	M1
Cessna C182	U	Piston	E1	M1
Cessna C206	U	Piston	E1	M1
Cessna C208 Caravan	U	Turbine	E1	M2
BN2 Islander/Trislander	U	Piston	E1	M1
Shorts Skyvan	U	Turbine	E1	M2
Sky Truck	U	Turbine	E2	M2
DHC-6	U	Turbine	E1	M2
Beechcraft 1900	P	Turbine	E2	M2
Thrush S2R-T34	U	Turbine	E1	M2
Piper Arrow	U	Piston	E1	M1
Piper Twin Comanche	U	Piston	E1	M1
Piper Cherokee 6	U	Piston	E1	M1
Bell 206	R	Turbine	E1	R2
Augusta AW 139	R	Turbine	E1	R2
Bell 212	R	Turbine	E1	R2

KEY:

"U" means Unpressurised Airframe.

"P" means Pressurised Airframe.

"R" means Rotorcraft

"Piston" means Piston-engine Powered.

"Turbine" means Turbine-engine Powered.

NOTE 1: M1 and M2 Licences may include Limited Avionics coverage if so endorsed. If an AME completes a type endorsement course on an aircraft and that course includes training on the avionics systems of the aircraft such that the AME can troubleshoot the system, identify the fault, replace the faulty unit, and test the system on the ground without using any special test equipment, then that AME may be allowed to sign the CRS for the replacement and testing of the Avionics unit.

NOTE 2: Compass Compensation is a Rating that can be added to any Licence once the applicant has satisfied the requirements to hold that Rating (refer para. 8.4.).

11. KNOWLEDGE SUBJECT AREAS - (The tables below show the knowledge subject areas for the aircraft maintenance engineer licence.)

A. CIVIL AVIATION REQUIREMENTS, LAWS AND REGULATIONS			
SER.	SUBJECT	HOURS	LEVEL
1.	International and State aviation law	10	3
2.	Airworthiness requirements	10	3
3.	Civil Aviation regulations	10	3
4.	Air transport operations	10	3
5.	Air Operator's organization and management	10	3
6.	Air Operator's economics	10	3
7.	Approved maintenance organizations	30	3
8.	Aircraft Maintenance Licence requirements	20	3
9.	The role of the State aviation regulatory body	10	3
10.	Aircraft maintenance, documents, and certification	10	3

B. HUMAN PERFORMANCE			
SER.	SUBJECT	HOURS	LEVEL
1.	General programme overview	3	3
2.	Human factors knowledge	3	3
3.	Communications skills	3	3
4.	Teamwork skills	3	3
5.	Performance management	3	3
6.	Situation awareness	3	3
7.	Human error	3	3
8.	Reporting and investigating errors	3	3
9.	Monitoring and auditing	3	3
10.	Document design	3	3

C. NATURAL SCIENCE AND GENERAL PRINCIPLES OF AIRCRAFT			
SER.	SUBJECT	HOURS	LEVEL
1.	Mathematics	75	1
2.	Physics	70	1
3.	Technical Drawing	70	1
4.	Chemistry	30	1
5.	Theory of Flight & Flight Controls (Basic-Fixed Wing)	100	2
6.	Theory of Flight & Flight Controls(Basic-Rotorcraft)	100	2

D. AIRFRAME ENGINEERING AND MAINTENANCE			
SER.	SUBJECT	HOURS	LEVEL
1.	Aircraft Maintenance Practices, tools, and Materials - General	200	3
2.	Airframe structures and systems - General	250	3
3.	Pressurized airframes and pressurization systems	100	3
4.	Airframe structures and systems - Rotorcraft	150	3
5.	Rotors and transmission systems - Rotorcraft	100	3
6.	Direct Reading Compass Compensation	8	3

E. POWER PLANT ENGINEERING AND MAINTENANCE			
SER.	SUBJECT	HOURS	LEVEL
1.	Piston Engines	250	3
2.	Piston engine fuel systems	50	3
3.	Propellers	100	3
4.	Gas turbine engines (<i>Incl. Turbo Props and Auxiliary Power Units</i>)	300	3
5.	Gas turbine engine fuel systems	50	3

F. AVIONICS SYSTEMS – ELECTRICAL AND INSTRUMENT			
SER.	SUBJECT	HOURS	LEVEL
1.	Maintenance practices and materials	200	3
2.	Electrical and electronic fundamentals	450	3
3.	Digital techniques, computers, and associated devices	200	3
4.	Aircraft electrical systems	250	3
5.	Aircraft instrument systems	250	3
6.	Compasses and compass compensation	40	3

G. AVIONICS SYSTEMS – RADIO COMMUNICATION AND NAVIGATION			
SER.	SUBJECT	HOURS	LEVEL
1.	Maintenance practices and materials*	200	3
2.	Electrical and electronic fundamentals*	200	3
3.	Aircraft radio communication & radio navigation systems	450	3
<i>*Not required if already completed under 11.6</i>			

H. AVIONICS SYSTEMS – AUTO FLIGHT AND INERTIAL NAVIGATION			
SER.	SUBJECT	HOURS	LEVEL
1.	Maintenance practices and materials*	200	3
2.	Electrical and electronic fundamentals*	200	3
3.	Automatic Flight Control systems (Fixed Wing)	200	3
4.	Automatic Flight Control systems (Rotary Wing)	75	3
5.	Aircraft inertial navigation systems	60	3
<i>*Not required if already completed under 11.6</i>			

12. CATEGORY TRAINING REQUIREMENT BREAKDOWN FOR AME LICENCE APPLICANTS

12.1 GENERAL BREAKDOWN

LICENCE CATEGORY (FOR AUTHORISATION TO CERTIFY...)	REQUIRED TRAINING COURSE (SEE COURSE HEADINGS)	TOTAL HOURS (MINIMUM)	FAMILIARISATION (REQUIRED FOR LIMITED AVIONICS AUTHORISATION)
M1 – Piston Engine powered, unpressurised aeroplanes of 5700kg or less MCTOM.	A, B, C, D1, D2, D6, E1, E2, E3.	1900	F1, F2
M2 – Aeroplanes, Turbine Engine powered, pressurized, or over 5700Kg MCTOM, if Type Trained to ATA104 Level III.	A, B, C, D1, D2, D3, E.	2350	F1, F2 (+Aircraft Type Training to ATA 104 Level III)
R1 – Rotorcraft, Piston Engine powered, and 3175 kg or less MCTOM.	A, B, C, D1, D4, D5, D6, E1, E2.	1800	F1, F2
R2 – Rotorcraft, Turbine Engine powered, or over 3175 kg MCTOM, if Type Trained to ATA104 Level III.	A, B, C, D1, D4, D5, E1, E2, E4, E5.	2145	F1, F2 (+Aircraft Type Training to ATA 104 Level III)
E1 – Avionics systems on all aircraft of 5700kg (3175 kg for Rotorcraft) or less MCTOM.	A, B, C, D1, D2, F, G.	3190	
E2 – Avionics systems on aircraft of more than 5700kg (3175 kg for Rotorcraft) if Type Trained to ATA104 Level III.	A, B, C, D1, D2, F, G, H.	3885	

12.2 EXPERIENCE REQUIREMENTS FOR THE AIRCRAFT MAINTENANCE ENGINEER LICENCE APPLICANTS

EXPERIENCE WORKING IN AIRCRAFT MAINTENANCE	
CATEGORY	TOTAL TIME (MONTHS)
"M1" Aeroplanes - Airframe and installed Power Plant - <i>(Piston engine, unpressurised, and 5700 kg or less MCTOM.)</i>	Forty-eight (48) months minimum, including: <ul style="list-style-type: none"> Fixed Wing aircraft – Twelve (12) months Piston Engines – Twelve (12) Months For a Type Rating – Six (6) months on the requested aircraft type.
"M2" Aeroplanes – Airframe and installed Power Plant - <i>(Turbine engine, pressurized, or MCTOM of more than 5700 kg.)</i>	Forty-eight (48) months minimum, including: <ul style="list-style-type: none"> Fixed Wing aircraft – Twelve (12) months Turbine Engines – Twelve (12) months For a Type Rating – Six (6) months on the requested aircraft type.
"R1" Rotorcraft – Airframe and installed Power Plant - <i>(Piston engine and 3175 kg or less MCTOM.)</i>	Forty-eight (48) months minimum, including: <ul style="list-style-type: none"> Rotary-wing aircraft – Twelve (12) months. Piston Engines – Twelve (12) months. For a Type Rating – Six (6) months on the requested aircraft type.
"R2" Rotorcraft – Airframe and installed Power Plant - <i>(Turbine engine or MCTOM greater than 3175 kg.)</i>	Forty-eight (48) months minimum, including: <ul style="list-style-type: none"> Rotary-wing aircraft – Twelve (12) months. Turbine Engines – Twelve (12) months For a Type Rating – Six (6) months on the requested aircraft type.
"E1" Avionics Systems – All aircraft with an MCTOM of 5700 kg (3175 kg for Rotorcraft) or less:	Forty-eight (48) months minimum, including: <ul style="list-style-type: none"> Aircraft electrical systems Aircraft Radio Communication systems Aircraft Radio Navigation systems Aircraft Instruments (Incl. Compasses)
"E2" Avionics Systems – On an aircraft with an MCTOM of more than 5700 kg (3175 kg for Rotorcraft) when trained to ATA 104 Level III on the aircraft type.	Forty-eight (48) months minimum, including: <ul style="list-style-type: none"> All "E1" items Auto Flight, Flight Management, and Inertial Navigation Systems – Six (6) months.
NOTE 1 - The experience time indicated for each subject area is based on ICAO Annex 1, Chapter 4, Subsection 4.2.1.3(a).	
NOTE 2 - The experience time (working on aircraft in service) may be reduced to twenty-four (24) months if an applicant has successfully completed an approved aircraft maintenance engineer training programme conforming to the applicable Regulations.	
NOTE 3 - The Airframe and Engine experience time may be credited concurrently.	

12.3 SKILLS TRAINING EXPERIENCE REQUIREMENTS FOR THE AIRCRAFT MAINTENANCE ENGINEER LICENCE APPLICANTS

LICENCE CATEGORY	MAINTENANCE SKILLS TRAINING	HOURS	LEVEL
M1 & M2	AIRFRAME		
	a) Basic workshop and maintenance practices	725	3
	b) Repair, maintenance and function testing of airframe systems and components	1000	3
	c) Job/Task documentation and control practices**	100	3
	d) Direct Reading Compass Compensation	8	3
M1 & M2	ENGINE & PROPELLER		
	a) Basic workshop and maintenance practices	450	3
	b) Repair, maintenance and function testing of engine systems and components	450	3
	c) Job/Task documentation and control practices**	100	3
E1 & E2	AVIONICS		
	a) Basic workshop & maintenance practices - Electrical	775	3
	b) Basic workshop & maintenance practices - Instrument	1000	3
	c) Basic workshop & maintenance practices – Radio	875	3
	d) Basic workshop & maintenance practices – Auto Flight	225	3
	e) Repair, maintenance and function testing of avionics systems and components.	100	3
	f) Job/Task documentation and Control Practices**	100	3
Note - **Job/Task documentation needs to be taught only once.			

APPROVED BY:




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