UK CAA Policy for the Medical Certification of Pilots and ATCOs with Diabetes

Information for Pilots, ATCOs and their Instructors, Examiners and Employers

Contents

1) Introduction

This information has been prepared to assist pilots and ATCOs in understanding the requirements for medical certification in the UK with diabetes and gives their employers information to assist in their transition back to work once they have regained certification.

Class 3 certificates are not included in the ARA.MED.330 protocol and so medical certificates are not being issued to Class 3 applicants with insulin treated diabetes.

2) Certification assessments for Class 1/2/3/LAPL applicants with diabetes

Type of Diabetes & Treatment	Available Certification / Limitations
Medications with Potential of Hypoglycaemia	
Insulins (all types) Class 1, 2, LAPL (unrestricted) - refer to CAA Medical Assessor	**Class 1 :** OML Valid only as or with qualified co-pilot SIC Specific regular medical examination(s) contact licensing authority SSL Special restriction(s) as specified Limited to flights in aircraft registered in UK, Ireland and Austria **Class 2 and LAPL :** OSL* Valid only with a safety pilot and in aircraft with dual controls (Class 2) SIC Specific regular medical examination(s) - contact licensing authority SSL special restriction as specified Limited to Flights In Aircraft Registered in UK, Ireland and Austria LAPL (restricted OSL): see AMC to MED.B.095
Sulphonylureas **Glinides** (and any combination therapy that includes suphonylureas or glinides) Class 1 and 3 - refer to CAA Medical Assessor Class 2 - in consultation with CAA Medical Assessor. Regular testing required – see "(3) Blood Testing Protocol" below.	**Class 1 :** OML Valid only as or with qualified co-pilot **Class 2 and LAPL:** OSL* Valid only with a safety pilot and in aircraft with dual controls Class 3 : Dependent on history and control may need SSL special restriction as specified Standard ATCO proximity condition **Class 3**
Treatment with Very Low Risk of Hypoglycaemia	
Glitazones **Gliptins** **Incretin mimetics** (GLP-1 analogues) **Biguanides** **Alphaglucosidase inhibitors** **SGLT2 inhibitors****	Class 1 : OML (unless monotherapy) Unrestricted class 2/3 and LAPL
Diet only	Unrestricted class 1/2/3/LAPL

*unrestricted certification may be possible where a medical flight test with a CFI or CAA FI(E) demonstrates that the in-flight requirements are adhered to and testing does not interfere with safe operations (see MFT form)

** SGLT2 inhibitors are only to be accepted for Class 1, 2 or LAPL certification on a case by case basis after risk assessment.

3) Blood Testing Protocol

a) Frequency

Before Flight/Duty

- At least 1 hour before reporting for flight/duty period or at least 2 hours before commencing flight/controlling (this allows good control to be confirmed or notification to company of unfitness).

- Less than 30 minutes before take-off or commencement of controlling and duties should not continue if testing shows a glucose level outside of the green ("no action") range (see "Actions to be taken" below) until the appropriate priority or corrective actions have been taken and glucose level has returned to the green range.

In-flight/controlling

- For insulins: At least every hour whilst flying
- For oral medicines that are potentially hypoglycaemic (sulphonylureas, glinides): At least every 2 hours (4 hours ATCO) whilst flying/controlling

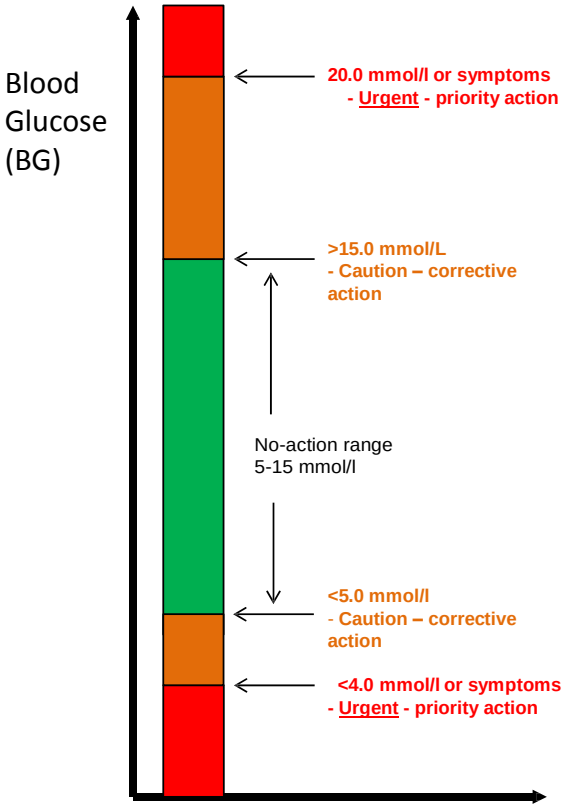
- Within 30 minutes of anticipated landing time. If the approach and landing are delayed and an unexpected period is spent in the 'hold', repeat blood glucose testing may be necessary.

- If any diabetic symptoms are experienced

Pilots or ATCOs who are taking formal rest and not seated at the controls/controlling position may suspend testing, but must restart testing prior to resuming flying/controlling.

Pilots and ATCOs taking non-hypoglycaemic medications should test before commencing flight/controlling and if symptoms are experienced during flight/controlling (mandatory for classes 1 and 3, recommended for class 2 and LAPL)

b) Actions to be taken



High Readings

Priority Action (>20.0mmol/l)

1) Repeat reading (+/- check CGMS)
2) Shall hand over duties or if solo pilot consider landing as soon as practicable
3) Otherwise, take appropriate insulin and/or modify CHO intake
4) Resume full duties when BG <20.0mmol/l

Corrective Action (>15.0mmol/l)

1) Repeat reading (+/- check CGMS)
2) If still >15.0mmol/l review insulin dosing and/or modify planned CHO intake

Low Readings

Priority Action (<4.0mmol/l)

1) Repeat reading (+/-check CGMS)
2) If still <4.0mmol/l shall hand over duties or if solo pilot consider landing as soon as practicable.
3) Ingest 10-15g readily absorbed CHO and retest after 15mins
4) Review insulin dosing and/or modify CHO intake
5) If test after ingestion is still <4.0 then ingest further 10-15g CHO and retest after 15 min
6) Wait for 45 mins after the BG returns to the 'green 'range before resuming duties. (In the unlikely event of any symptoms of cognitive impairment the pilot/ATCO should not resume duties for the duration of the flight/control duty period).
7) If crew assistance is required or the pilot becomes incapacitated then a MOR shall be filed

Corrective Action (<5.0mmol/l)

1) Repeat reading (+/- check CGMS)
2) If still <5.0mmol/l ingest 10-15g readily absorbed CHO and retest after 30 mins
3) Review insulin dosing and/or modify CHO intake

Important Notes. Certificate holders must comply with the following:

- **Testing should be performed using an ISO 9000 certified device. A spare device must be carried.**

- Pilots and ATCOs should ensure that blood glucose testing is pre-planned and alerts/reminders are set up for testing as per the relevant schedule.

- All commercial pilots should brief their co-pilot fully prior to the flight. The brief should include the nature of their diabetes, their testing regime, the timing and method of blood glucose testing, actions to ensure the blood glucose remains in the acceptable range, medication that will be or may be required during the flight, possible symptoms of high or low blood glucose and actions to be taken in the event of incapacitation, according to the SOPs.

- Commercial pilots should ensure their co-pilot cross checks their test result and should always say the reading aloud so that it is recorded on the voice flight recorder.

- All pilots and ATCOs should annotate the results of testing in their log book for compliance monitoring (alternative, electronic recording methods may be acceptable).

- Pilots who have to take action for a high or low reading should always make an entry in their log book, documenting the action taken.

- The basic principle of following the 'Be aware → Eat → Test' cycle should be remembered at all times.

- The test meter memory will be periodically reviewed by an AME or the CAA against the flying/controlling log to ensure protocol compliance. Failure to demonstrate compliance with the schedule of testing is likely to result in suspension of the medical certificate.

- General aviation pilots should record the blood glucose levels in their log book along with the time of testing. They may wish to use the commercial pilot recording template (see 'information for operators' section below) as a checklist for longer flights.

- Emergency situations are covered in the section 'Information for operators' below. Pilots should always adhere to the fail safe position which is to always take rapidly absorbed carbohydrate if unable to test.

4) Insulin pumps

Pilots who use insulin pump delivery systems should submit details of their 'back-up' non-pump regimen in the event of pump failure. Tubing should be checked for bubbles prior to ascent to altitude and any bubbles should be tapped out.

In the event of a rapid decompression at high altitude the insulin pump should be switched off immediately and 15g readily absorbed carbohydrate ingested as soon as possible, certainly within 15 minutes of the decompression. More frequent blood glucose testing should be carried out thereafter. The insulin pump may be restarted after landing or when blood glucose levels and stability of glycaemic control can be verified. A similar procedure should be followed for other emergency situations.

5) Follow up/surveillance requirements for pilots/ATCOs with diabetes

a) Requirements for Pilots on insulin or Pilots/ATCOs taking other hypoglycaemic medication

		Class 1 and 3	Class 2	LAPL
Review with CAA Diabetes Specialist - symptoms, clinical reports, review of data logging of operational blood sugars and review of flying/duty log		6-monthly	Annual	For initial assessment only
HbA1c frequency		Three monthly for 2 years then six monthly thereafter if stable	Six monthly	Six monthly
Medical Report(s) From applicant's own consultant diabetologist (See CAA specification for diabetes reports)		Six monthly alternating with review by CAA	Annual alternating with review by CAA (Report from Specialist diabetologist or GP diabetes clinic)	Annual - Review by AME – pilot should ensure that a copy of the reports are also provided to the CAA medical assessor for diabetes protocol data collection purposes (Report from Specialist diabetologist or GP diabetes clinic)
Exercise test Notes: 1) A cardiology review, including exercise test, may be required at any time on clinical indication. 2) Pilots with persistent microalbuminuria or hypertension who hold a Class 1 medical certificate require annual cardiology review, to include exercise testing, if their cardiovascular risk is ≥20% over 10 years.		At initial assessment then: 5 yearly under 40 (see note 2) Annual over 40	At initial assessment then: 5 yearly under 40 Annual over 40 If omitted, requires OSL/OPL and ECG at every medical	At initial assessment then: 3 yearly over 40 If omitted, requires OSL/OPL and ECG at every medical
Certification Review	Oral	6 monthly by CAA Medical Assessor	Annual by AME	Annual by AME
	Insulins	6 Monthly by CAA Medical Assessor (not Class 3)	Annual by CAA Medical Assessor	Annual by CAA Medical Assessor

b) Requirements for Pilots/ATCOs taking non-hypoglycaemic medication

	Class 1 and 3	Class 2	LAPL
HbA1c frequency	Six-monthly	Annual	
Medical Report(s) (See CAA specification for reports)	Annual (Specialist)	Annual (Specialist or GP)	
Exercise test : Notes: 1) A cardiology review, including exercise test, may be required at any time on clinical indication. 2) Pilots with persistent microalbuminuria or hypertension who hold a Class 1 medical certificate require annual cardiology review, to include exercise testing, if their cardiovascular risk is ≥20% over 10 years.	At initial assessment 5 yearly under 40 (see note 2) Annual over 40	If 10 yr cardiovascular risk >20%. Then, annual if 10 yr cardiovascular risk remains >20%.	On clinical indication
Certification Review	Annual by CAA Medical Assessor	Annual by AME	

6) Medical Assessment for UK National Private Pilots' Licence (NPPL)

UK pilots who wish to exercise the privileges of a NPPL flying aircraft less than 5700kg MTOM must visit an AME and apply for a LAPL medical certificate. Those who wish to exercise the privileges of a NPPL flying aircraft no greater than 2000kg MTOM may self-declare their fitness as long as they meet and continue to meet the requirements (including the DVLA blood glucose testing schedule).

7) Indications for change of fit status

- An HbA1c between 8.5-10% should trigger a diabetes review and review of treatment. A period of unfitness may be required to re-stabilise treatment.

- An HbA1c of greater than 10% indicates poor control and should normally entail an unfit assessment.

- Medication change (which necessitates a change to the testing protocol e.g. starting insulin) = unfit minimum 2 months. Those who should be under continuing CAA clinic surveillance as indicated in 5(a) above must be reviewed before a return to flying/controlling. Otherwise a medical report of stability/symptoms/satisfactory BGMs is required before return to flying.

- Change of insulin regimen (including new use of pump) = unfit minimum 1 month. Those who should be under continuing CAA clinic surveillance as indicated in 5(a) above must be reviewed before a return to flying/controlling. Otherwise a medical report of stability/symptoms/satisfactory BGMs is required before return to flying.

- Change of non-hypoglycaemic medication type or dose = 2 weeks unfit. Stability should be reviewed/confirmed by GP or AME.

- **Episodes of severe hypoglycaemia must be reported**. Such occurrences (including but not limited to severe hypoglycaemia requiring the assistance of another person) will normally entail an unfit assessment. Specialist review will be required before consideration of any resumption of flying/duties.

- Development of any retinopathy requires CAA ophthalmological assessment and is likely to result in further restriction or unfitness if there is any field loss or reduction in visual acuity.

- Presence of significant nephropathy significantly increases cardiovascular risk and is likely to entail unfitness.

- Non-declaration of symptoms, medical history or provision of incomplete testing records/flying logbook is likely to entail unfitness.

8) Diabetes report specification

The following headings are for guidance purposes only and should not be taken as an exhaustive list. All relevant information should be reported.

(Please note that the European Regulations and UK CAA's Guidance Material for fitness decision, acceptable treatments and required investigations (if specified) can be found in the medical section of the CAA website (www.caa.co.uk/medical then click on 'decrease in medical fitness' for the relevant class of certificate). For many conditions, there are also flow charts available for guidance on the assessment process.)

1. Diagnoses

Type
Comorbidities

2. Presenting History and initial Investigation and Treatment (initial report only)

Presenting complaint and symptoms (incl date of diagnosis)
Nature of condition, circumstances surrounding onset, precipitating factors

3. Progress since last report

Review and management of glucose monitoring, correlated with symptom review
Changes to treatment
Number of severe hypoglycaemic episodes in past year
Loss of hypoglycaemic awareness
Other relevant medical history
Current treatment

4. Screening Examination and Investigation Findings

Blood tests
HbA1c
Liver and Renal Function (eGFR and ACR)
Lipids
Screening for Complications
Retinopathy report including gradings (for Class 1 and 3 by an ophthalmologist/ specialist clinic)
Neuropathy
Nephropathy
Cardiovascular risk assessment confirming no evidence of cardiovascular disease
See requirement for periodic exercise testing
Risk factors including family history, smoking, alcohol intake and weight (BMI)
Blood Pressure within acceptable parameters (British Hypertension Guidelines)

5. Follow up and further investigations/referrals planned or recommended

Anticipated follow up/frequency of clinical reviews and investigations
Confirmation disease is well controlled at date of report on stable dose of acceptable medication

6. Clinical Implications

Any concerns regarding disease progression, treatment compliance or risk of sudden incapacity

UNITED KINGDOM CIVIL AVIATION AUTHORITY

OPERATIONAL/MEDICAL FLIGHT TEST REPORT

Note: For commercial pilots the Medical Flight Test should preferably be undertaken on the first line flight, as testing in the simulator may not adequately replicate the relevant aspects of the flight environment.

1) **Candidate's Personal Details:**

Name (in full): .....

CAA Ref No: .....

Date of Birth: ...../...../.....

Current Address: .....

.....

.....

Telephone Numbers

Home: .....

Work: .....

Mobile: .....

2) **Purpose of test:**

To determine that the applicant demonstrates knowledge of the aeromedical issues relevant to diabetes and demonstrates safe management of their health condition whilst exercising licence privileges

3) **Declaration**

I understand the purpose of the medical flight test

Signature of candidate ..... Date ...../...../.....

Name: ……..... CAA Ref No .....

4) **Medical Flight Test Report** (To be completed by Company TRE for Class 1, CFI or FIE for Class 2 or LAPL)

Aircraft Type & Registration: .....

Flight/Sectors assessed: .....

Date & Place Of Test: ...../...../..... - .....

Examiner's Name (please print): .....

Examiner's CAA Licence No: .....

Blood Testing machine Used: .....

Acceptable

Appropriate briefing on diabetes conducted using UK CAA briefing sheet ..... Yes/No

Evidence of compliance with blood testing in accordance with relevant protocol..... Yes/No

Check Log book and glucose memory meter congruity for previous flight(s)..... Yes/No/N/A

Tests conducted in safe manner without interference with safe operations..... Yes/No

Tests conducted at correct times in accordance with schedule..... Yes/No

Time	Flight phase	Result & Comments		Time	Flight phase	Result & Comments

Spare meter available? ..... Yes/No

Appropriate stowage of equipment/resources ..... Yes/No

Availability of carbohydrate – state what .... Yes/No

Comments:

Recommendations (e.g. any type/class-specific issues)

Signed ..... Date ...../...../.....

Return completed form to: CAA Medical Department, Aviation House, Gatwick Airport South, West Sussex RH6 0YR

10) ATCO WITH DIABETES TREATED WITH POTENTIALLY HYPOGLYCAEMIC MEDICATION

UNITED KINGDOM CIVIL AVIATION AUTHORITY

OPERATIONAL TEST REPORT

1) **Candidate's Personal Details:**

Name (in full): .....

CAA Ref No: .....

Date of Birth: ...../...../.....

Current Address: .....

.....

.....

Telephone Numbers

Home: .....

Work: .....

Mobile: .....

2) **Purpose of test:**

To determine that the applicant demonstrates knowledge of the aeromedical issues relevant to diabetes and demonstrates safe management of their health condition whilst exercising licence privileges

3) **Declaration**:

I understand the purpose of the operational test

Signature of candidate ..... Date ...../...../.....

Name of ATCO: ……..CAA Ref No .....

4) **Operational Test Report** (To be completed by Watch Manager)

Job role (e.g. area, approach, tower): .....

Duty period(s) assessed: .....

Date & Place of Test: ...../...../..... - .....

Examiner's Name (please print): .....

Examiner's CAA Licence No: .....

Blood Testing Machine Used: .....

Acceptable

Appropriate briefing on diabetes conducted using UK CAA briefing sheet ..... Yes/No

Spare blood testing machine available ..... Yes/No

Where an insulin pump is used, alternative delivery method available ..... Yes/No/N/A

Availability of carbohydrate – state what ..... Yes/No

Appropriate stowage of medication/equipment/resources ..... Yes/No

Appropriate briefing on diabetes conducted using UK CAA briefing sheet ..... Yes/No

Check operational blood glucose testing records and glucose memory meter congruity .....

.....Yes/No

Evidence of compliance with blood testing in accordance with relevant protocol ..... Yes/No

Tests conducted in safe manner without interference with safe operations ..... Yes/No

Time	Result & Comments		Time	Result & Comments

Appropriate stowage of equipment/resources ..... Yes/No

Availability of carbohydrate – state what ..... Yes/No

Comments:

Recommendations (e.g. any type/class-specific issues)

Signed ..... Date ...../...../.....

Return completed form to: CAA Medical Department, Aviation House, Gatwick Airport South, West Sussex RH6 0YR

11) Information for Operators on Flight Crew with Insulin-Treated Diabetes

Summary
Operators may have flight crew who develop diabetes requiring insulin who wish to return to flying once their condition has stabilised or may recruit a pilot with this condition. The UK CAA, Austrocontrol and IAA are following a protocol specified in PART.ARA (ARA.MED.330). This guidance provides information for operators and should be read in conjunction with the document. ‘‘The Medical Assessment Protocol for Pilots With Diabetes Treated with Insulin and/or Potentially Hypoglycaemic Medication”

Diabetes

Insulin is a hormone produced by the pancreas which controls blood glucose (sugar) levels. Diabetes develops when there is insufficient insulin or it cannot be effectively used by the body and blood sugar level regulation becomes unbalanced.

Treatment is often with medicines (tablets or insulin injections) that allow the body to use the circulating sugar, thus keeping the blood sugar level in the normal range. High levels occur if not enough medicine is taken/used or too much carbohydrate is eaten and low levels can occur if too much medicine is taken/used or not enough carbohydrate is eaten to balance the medicine.

Pilots with insulin-treated diabetes

A Class 1 medical certificate is only issued to a pilot on insulin if they fulfil stringent criteria including demonstration of excellent control of their diabetes.

Pilots with insulin-treated diabetes have to comply with the ARA.MED.330 protocol including frequent blood sugar testing before and during a flight duty period to ensure their blood glucose levels remain within an acceptable range.

Hazards should be identified through the operator’s SMS and the operator is responsible for putting in place measures to remove, or mitigate, the risks of the identified hazards.

Examples:

Hazard	Mitigation
Incapacitation due to low or high blood sugar level	Multi-pilot flying only in commercial operations Adherence to blood glucose mandatory blood glucose testing protocol Awareness of the risk of not adhering to the protocol through training and pre-briefing Cross checking of blood glucose results by other pilot(s) Immediate consumption of carbohydrate in the event of a low reading or if operational circumstances prevent blood glucose testing
Sharps injury from blood sugar testing equipment	Use of a self-contained testing system or a sharps box for lancet after use
Distraction of other pilot	Full briefing in advance of flight duty
Pilot incapacitation not identified	All pilots briefed in standard operating procedures in the event of a pilot becoming unwell or uncommunicative

Possible symptoms of high or low blood glucose:

Low blood glucose (hypoglycaemia) (if level less than 3)	High blood glucose (hyperglycaemia) (if level greater than 20)
Sweaty, pale skin	Thirst
Mood changes	Excess urine output
Poor concentration/distraction	Dehydration
confusion	Mood changes
	Excessive tiredness/sleepy
	Blurred vision

Considerations for Operations Manuals

a) General (these items are likely to be included already)

Pilot responsibility – decrease in medical fitness
The operations regulations contain requirements for crew not to perform duties when unfit or if aware of any decrease in their medical fitness that might render them unable to safely exercise licence privileges.

Incapacitation of pilot
Any incapacitation, whether sudden or subtle, should be handled in the same way as any other medical incapacitation.

Training for pilot incapacitation
Training on how to recognise pilot incapacitation and the standard operating procedures to follow in the event of pilot incapacitation should be included in the annual SEP training.

b) Specific (these items may need to be added)

Possible symptoms of high or low blood **glucose**	
Low blood glucose (hypoglycaemia) (if level less than 3 mmol/l)	**High blood glucose (hyperglycaemia) (if level greater than 20 mmol/l)**
Sweaty, pale skin	**Thirst**
Mood changes	**Excess urine output**
Poor concentration / distraction	**Dehydration**
confusion	**Mood changes**
	Excessive tiredness/sleepy
	Blurred vision

Pilot responsibilities – insulin-treated diabetes
Flight crew members must inform their linemanager if returning to flying after being re- certificated following a diagnosis of diabetes and being treated with insulin. In this circumstance, Class 1 medical certification will be subject to an operational multi-pilot limitation; the line manager should be informed of any other operational limitations.
The pilot must comply with the schedule of blood glucose testing required by the UK CAA.

The pilot must brief the other member(s) of the flight crew (and other members of the crew as necessary) before each flight on:

- The reason for blood glucose tests
- How the blood glucose test is done
- When blood glucose tests are required (including with reference to the flight plan)
- Actions to be taken in the event of a blood glucose test outside of the acceptable range (below 5 or above 15 mmol/l)
- Whether, when and how insulin will be used during the flight duty period.
- Possible symptoms of low or high blood glucose (Appendix 1).
- Actions to be taken by the pilot if a test is ‘out of range’.

Blood glucose test times should be pre-planned, by time from departure, waypoints or by setting up alarms – an iPad, phone or in-cockpit alarm could be used.

It is the pilot's responsibility, when on duty, to carry any medication (e.g. insulin) required, any equipment required to deliver the medication (e.g. pens and pumps) and documentary evidence from their general practitioner or diabetes specialist confirming the need to carry the medication and equipment. Sufficient medication and equipment should be carried to cover the planned duty period and additional contingency for unplanned extensions.All equipment, medication and carbohydrate for emergency consumption should be safely stored in the cockpit and immediately accessible.

Testing should always be undertaken ensuring compliance with standard operating procedures at all times. The pilot should avoid testing blood glucose during ground manoeuvering in the vicinity of runway holding areas or entering or crossing a runway, or in phases of flight associated with heavy workload including the take-off and approach and landing.

The result of the blood glucose test should be spoken aloud by the pilot so that it is captured on the cockpit voice recorder and the test result should be shown to and cross-checked by the other pilot.

The blood testing schedules are described in 'Blood glucose testing' (Section 3 above).
Blood glucose levels should be recorded in, and a comment made in the remarks column of, the Log Book.

An example template for recording blood glucose levels is shown here:

UK Civil Aviation Authority

Blood Glucose Log (for pilots with diabetes)

Pilot Name: **CAA Ref**

No: A/C Type: **Flight No:** **Route**

flown:

Date and Time:	Flight Phase:				Reading ($mmoL^{-1}$):	X-Check:		Symptoms:	Comments:
	Pre-Report	Pre-Flight	In Flight	Pre-Landing		Other Crew	CVR		

A record should be made of any snacks or meals taken, insulin used, any bunk rest and any corrective action that was required in the event of a low or high result.

Any crew intervention required to assist a pilot in controlling their blood glucose levels is a reportable event and should be reported under the MOR scheme and the pilot should declare themselves unfit.

Any failure to comply with the testing schedule is a reportable event and should be reported under the MOR scheme.

Blood glucose testing must be done after every period of prolonged rest, 30 minutes prior to resuming flight duties.

If the testing equipment is not self-contained, the lancet, needle and any clinical waste should be disposed of in a single use sharps box.

The pilot should always carry a spare, functioning glucose meter with memory; if both meters become unserviceable the pilot should hand over control of the aircraft to the other pilot. In this event it is recommended that the autopilot should be engaged to reduce workload.

Emergency situations

If operational considerations prevent the pilot from undertaking a blood glucose test at the required time 15g of rapidly absorbable glucose/carbohydrate (e.g. 3 jelly babies, 4 glucotabs) should be consumed immediately and blood glucose testing done as soon as possible.

In an event such as a rapid decompression there would be no time to take precautionary carbohydrate and priority would be given to flying the aircraft. Carbohydrate should be taken once the emergency has stabilised. If a mask continues to be required, it could be quickly lifted, carbohydrate consumed and the mask replaced within a couple of seconds. In any other emergency situation 15g carbohydrate should be taken as soon as practicable.

If an operational emergency is prolonged, with no opportunity for blood glucose testing, this consumption of 15g carbohydrate must be repeated every hour. Blood glucose testing should be undertaken hourly or more frequently if there was any concern about the pre-emergency glucose trend or if a lot of carbohydrate has been taken over the course of several hours without the possibility of testing.

If the pilot has an insulin pump, in the event of a decompression, it should be switched off and 15g carbohydrate should be taken as soon as possible.

If the pilot is awoken from their bunk for an emergency, blood glucose must be tested prior to resuming control.

Responsibilities of other pilot(s) (whether commander or not)

The operator may wish to inform the whole fleet that they may be rostered with a pilot with insulin-treated diabetes so that flight crew who have any concerns about flying with another pilot using a needle and syringe on the flight deck and periodically undertaking finger prick blood tests have the opportunity to raise these concerns. Any pilot who is uncomfortable should notify their line management.

The other pilot(s) should positively cross-check each blood sugar test result during the flight duty period and confirm the result verbally.

The other pilot should respect the confidentiality of any medical information shared by the pilot.

Responsibilities of the operator

The operator will need to ensure all additional operational procedures and information is promulgated to all pilots in the fleet of a pilot with insulin-treated diabetes.

Flight Manuals may need to be amended to include operational considerations for pilots and operators of pilots operating with insulin-treated diabetes.

The operator will have access to confidential medical information about their pilot with insulin-treated

diabetes. The normal rules of medical confidentiality apply and must be respected at all times.

Flight crew with diabetes treated with medication other than insulin

Other medications that may lower blood sugar levels e.g. sulphonylureas or glinides may be used by diabetic pilots to control their blood sugar levels. Pilots on these medications should be subject to the same blood sugar tests, protocols and operational procedures as pilots on insulin. The testing frequency is reduced to every 2 hours.

Pilots on glitazones, gliptins, GLP-1 analogues, biguanides, alphaglucosidase inhibitors only require one pre-flight blood glucose check; if this is within the acceptable range, they do not need to undertake further in-flight testing.