ICAO Annex 1, Para 1.2.4.9
Case 1

- 52 year old pilot with a major airline
- South American descent but a US citizen
- Walks into US embassy in State where he is working as a pilot and asks for help because “the CIA is stalking him” and he fears for his life.
- US embassy has him on file as a pilot with FAA Class 1 license. Embassy has an FAA office.
- Embassy decides to inform CAA of the State where pilot is currently working.
- CAA informs you (as the Medical Assessor)
- What would you do?
• Taken off flying duties and advised to see his DME.
• Pilot goes on long leave
• Comes back after 6 weeks and reports to work
• Company sends him to see doctor
• Ultimately referred to a psychiatrist
• Diagnosed as Delusional disorder (paranoid type)
• Put on medication
• Symptoms remit after taking medication
• Applies for recertification
• Decision?
Delusional Disorder (Paranoid Type)

- This is a life-long organic disorder

- There is no specific remedy for the disorder apart from symptomatic control

- Recurrence of psychotic episodes may occur unpredictably despite periods of successful remission

- The psychotic episodes do not have prodromal warning signs and are complex and logically constructed thus rendering overt acts in respond to the delusional thoughts highly likely

- Other co-morbid mental conditions, like depression, can occur periodically
Case 2

- 58 years old pilot holding Class 1 license.
- He had a left thigh myxoid liposarcoma which was removed on 30 Aug 07. Weight of tumour when excised was 10 kg!
- Final histology was of a low grade liposarcoma.
- His nerves were assessed to be intact at surgery. Tumour was localised; No metastases.
- 3 months after excision pilot presents himself for recertification for a Class 1 license.
- Decision?
Capt X made a good recovery and regained full physical capacity with full movement and no residual numbness and tingling within the limb.

He has only mildly reduced strength compared to right lower limb.

An assessment made in flight simulator showed full functional ability.

Decision?
The well-differentiated type and most myxoid types have favorable prognoses, with 100% and 88% 5-year survival rates, respectively.

Low grade lesions usually recurs with local recurrence only especially with incomplete excision initially and rarely metastasize,

Repeated local recurrences may cause tumour to evolve into higher grade of sarcoma that will change the prognosis.

Overall low grade tumours compare very favorably to high grade tumours which tends to have higher incidence of local recurrence and distant metastasis.

The lungs and the liver are the most common sites of metastasis.

Decision: Fit for Class 1: Multi – crew; 3 monthly review by orthopaedic oncologist
2 years later:

Had a successful excision to remove the tumour 2 years ago

Has maintained good functional capacity and exercises regularly

His prognosis remains optimistic based on the type of tumour, the localized lesion and good follow up results.

Any local recurrence is expected to be slow growing as with his initial lesion and metastasis is unlikely.

With the follow up regime he can be monitored closely to watch for local recurrence and any other complications

Decision: Unrestricted Class 1 license; 6 monthly review by orthopaedic oncologist
Case 3

50 year old Class 1 license holder with a major airline.

Known case of IgA Nephropathy since 1992 on regular follow up with renal physician.

Renal functions started deteriorating in 2007 progressing to end stage renal failure in August 2008 requiring dialysis.

Decision?
He received a kidney from his sister on 19 Nov 08. Post-operative progress was uneventful.

On regular outpatient follow up since renal transplant.

During follow up, he was found to have virus infection, which can pose a risk of viral nephritis leading to graft failure if uncontrolled.

His Mycophenolate dose was reduced and virus load reduced.

Result on 2 Apr 09 showed virus undetectable.
He also had an episode of Serous Retinopathy presenting with a patch of grey veil over his right visual field 3 months into taking the medications post-transplant.

Reviewed by ophthalmologist and discharged immediately without follow up with the explanation that it was due to the steroid therapy and expected to resolve with tapering down of steroids.

When reviewed, he was still able to see a faint grey veil in his right eye when he blinked; otherwise visual acuity not affected
He remained on close renal follow up.

Serum electrolytes normal.

Serum Creatinine elevated at 140 UMol/L (63-110 UMol/L).

Currently on maintenance Cyclosporin, Mycophenolate Mofetil, Co-trimoxazole, Prednisolone, Atenolol, Amlodipine and Ca Carbonate and Vit D.

Presents for recertification.

Decision?
Capt. X was only on a short period of dialysis before receiving his kidney and hence does not have sequelae of long term dialysis. Tissue match excellent.

He recovered well from the surgery and the graft remained healthy on cocktail of immune modulating medications although the slightly elevated Serum Creatinine will require close monitoring.

Does not experience any side effects symptomatically from the medications.

Has a good grasp of his health condition and the potential issues to look out for like insidious infections.

He is confident that he is able to comply with the long term medication and follow up regime and exhibit a good insight as to when to remove himself from flying should he feel any drop in his physical condition.
Decision?

Any need for operational restriction/s?

Any need for medical review?

Fit Class 1 ---- Unrestricted;
6 monthly review by renal physician
Case 4

- Capt X is a 44 year old Class 1 licence holder with a major airline.
- He reported some eye symptoms of visual blurring and eye pain to his DME in November 2008 during his routine licensing medical assessment.
- Was referred to National Eye Centre for consult.
- Diagnosed to have bilateral chronic angle closure glaucoma with moderately advanced visual field defects in the right eye.

Decision?

At initial examination, Capt X’s right eye VA was 6/18, 6/9 with pin-hole; positive afferent papillary defect; IOP 40 mmHg; advanced cupping of optic disc; superior hemi-field scotoma.

His left eye VA was 6/6; IOP 18 mmHg; optic disc cupping 0.7.

Gonioscopy showed appositionally closed angle in both eyes.
Capt X underwent bilateral laser peripheral iridotomies and was maintained on Gutt Combigan bd and Gutt Travatan ON to right eye after the procedure.

Capt X’s condition was not reported to CAMB until 6 months later during his subsequent Licensing assessment.

He was reviewed by CAMB’s ophthalmologist.

His Goldmann’s perimetry test was noted to have marked loss of the superior nasal field of the right eye extending to the equator plus a loss of the temporal crescent of 5-10 deg.

Decision?
Assessment:

He was deemed to have good overlap of his right superior-nasal field loss by his left eye field.

He was therefore cleared to resume flying duties with 6 monthly ophthalmological review with Goldmann’s perimetry assessment included.

Restricted Multi-crew
Under monitoring, Capt X’s last Goldmann’s assessment in June 2011 showed some progression of the superior-nasal right visual field loss.

Report from SNEC stated stable Humphrey’s and series Optical Coherence Tomography (OCT) of optic nerve heads.

In the report from SNEC dated 24 October 2011, the serial Humphrey perimetry as well as OCT showed slight progression of glaucomatous optic neuropathy in the right eye.

IOP in both eyes were 13 mmHg. His treatment was stepped up to Gutt Combigan bd + Gutt Travatan ON + Gutt Azopt tds to RE.

Decision?
Capt X’s condition has been monitored at 6 monthly intervals and slight progression in the disease, based on visual field defects and OCT, has been noted over the last one year by his ophthalmologist despite treatment and well controlled IOP.

However, the left eye remained stable with full visual field after laser PI without any medication.

With significant visual field loss in his right eye, the following factors are considered with regard to compatibility with the safe exercise of privileges of a pilot licence:
• The serial Goldmann’s perimetry did not show evidence of functional deterioration since November 2009.
• Adequacy of overlap of the visual field defect by the left eye.
• Central visual acuity of both eyes are preserved and stable.
• There is still a likelihood that the left eye’s condition may progress in the future and this will be insidious in nature.

Based on the above factors, Capt X’s condition is still compatible with safe exercise of his Class 1 licence.

However, a restriction of as or with co-pilot is deemed necessary in view of the disease progression noted.
1. 55 year old airline Captain.

2. Had acute myocardial infarct – admitted to Tertiary Hospital on 12 December 2004. Diagnosed to have anterior myocardial infarct. Treated with IV rTPA.

3. Cardiac cath. Done on 16 Dec. 2004. Findings: Significant stenosis of proximal LAD and obtuse marginal branch of left circumflex. Right coronary artery was reported as non dominant with a 100% stenosis in the mid segment.

4. Echo ejection fraction was 55%.

? Decision
Treatment:

- On 22 December 2004, Mr. S underwent angioplasty.
- Two drug eluting stents were placed in the LAD and a third in the obtuse marginal branch.
- The right coronary was not intervened as it was considered non dominant.
Follow up:

• Myocardial perfusion imaging scan done on 22 July 2005.
• Scan evidence of small non-transmural infarct in the inferior and inferoseptal wall of the left ventricle (stress defect represented 10% of the left ventricle by polar map quantitation).
• No residual ischaemia at Stage 5 Bruce Protocol.
• Rest Gated scan showed normal LV size and function.
• LVEF 71%.
• A repeat angiogram done on 26 August 2005, showed that the stents are still patent with TIMI grade 3 flow. The right coronary, reportedly non-dominant, showed the same stenosis in the mid-part. It was deemed that the right coronary did not require any intervention either percutaneously or operatively.

?Decision
Other Parameters:

- Mr. S is not hypertensive and BP readings during his hospitalisations were normal.
- No arrhythmias noted.
- He is not a diabetic.
- He says that he has never smoked.
- Current medications: He is on Plavix and Cardiprin.
- His GP reports that Mr. S is fit and well and exercises daily.
- The lipid profile done on 19 August 2005: Total Cholesterol 118 mg/dL; HDL 48 mg/dL; LDL 54 mg/dL; TG 81 mg/dL.
The Initial medical report stated an anterior myocardial infarct whereas the Myocardial perfusion scan showed an inferior and infero-septal infarct. The scan did not pick up the anterior infarct. Could the patient have had a silent infarct or is this finding artefactual?

CAMB Cardiologist: Indicated that the right coronary artery appeared to be co-dominant and not non-dominant.

The absence of anterior and the presence of scan evidence of the inferior/inferoseptal infarcts were also noted.

He noted that the OM branch of the left circumflex is ectatic and there is no apposition of the stent to the vessel wall.
An opinion was sought from Prof. Michael Joy (UK): He stated the following:-

• The right coronary artery bears a significant proximal stenosis of 80 to 85% following which there is a good right ventricular branch, which back fills the right coronary territory distal to the obstruction below the origin of this vessel.

• Occlusion of the right coronary artery would almost certainly lead to further infarction.

• There is evidence of possible limited anterior reversible anterior ischaemia on the MIBI scan

• There is some concern about the stent in the OM1, as part of the stent lies within the ectatic part of the vessel.
Pilot offered the option of getting further treatment

Current Decision: Unfit Class I
Case 6

1. 22 year old probationary Air Traffic Controller

2. Well until progression to Aerodrome part of ATC course

3. Symptoms of worry, nervousness, palpitations and headaches especially when in simulated control of aircraft

4. Developed symptoms of anxiety and depression

5. Subsequently mood deteriorated and she became preoccupied with her physical health

6. ? Decision
Reviewed by psychiatrist:

1. Suffers from Adjustment Disorder with depressive features.

2. Despite treatment she has not been able to come out of her fears of air traffic control and the possibility of dangers of air accidents. Had intractable fear and associated depression.

Decision: Unfit for Class III
1. 48 year old airline Captain

2. 2007 Collapse and loss of consciousness while walking with colleagues after breakfast during duty stopover in Tahiti. Fractured rib during fall.


5. Past episodes of ‘fainting’: Fainted in school assembly 17 years; Fainted at restaurant 18/19 years; Fainted partner’s amniocentesis; Past near-fainting during school assemblies and church services.
Further work up:


**Working diagnosis**: Recurrent neurocardiogenic syncope

**Decision?**
Decision
‘Unfit’ all classes

Rationale
Approx 20% pa incapacitation likelihood
No protective features in cockpit
No reliable identifiable precipitants to syncope
No reliable medical / surgical risk mitigation

Sequelae
A couple of years of courtroom experience
Finally CAA won-out, after appeal to High Court
Case 8

1. 53-year-old airline Captain. Gave history of confusing runway turn off and taxiway lights (blue and green)

2. He was deemed colour safe at initial medical examination many years earlier

3. Had a repeat colour lantern test done on his routine renewal medical examination. This time the result indicated he was colour unsafe

Decision at this time?
Work up:

- Referred to ophthalmologist for workup.
- ERG was suggestive of bilateral maculopathy.
- Both rods and cones affected diffusely with consistent delays in scotopic, photopic and flicker ERGs.
- Impression: Retinal dystrophy consistent with a picture of early Retinitis Pigmentosa.

**Decision:** Unfit for Class I Assessment
1. Mr. X is a 42-year-old pilot with XYZ Airways.

2. Picked up to have left renal cell carcinoma incidentally, following an ultrasound of the abdomen (done for epigastric discomfort, in Phuket) in Jan 2006.

3. CT Scan done in Singapore on 2 Feb. 2006 showed a 4cm x 3.8cm mass arising from the upper and mid poles of the left kidney. No invasion of the renal vein. No para aortic or retroperitoneal lymphadenopathy seen. Liver and spleen normal; No adrenal enlargement noted. No ascites and no pulmonary nodules.

4. Decision
Treatment and Follow Up:

- He underwent a laparascopic left radical nephrectomy on 13th Feb. 2006.
- Final histology showed Stage 1 left renal carcinoma (Chromophobe type).
- The tumor was confined within the renal capsule and the surgical margins were free of tumor (these include the ureteral margin, renal vessels, renal pelvis and perinephric fat.)

Summary: Stage 1 Chromophobe Renal Cell Carcinoma. There is no pre or postoperative evidence of metastasis. He has had a curative resection done and has recovered well. Recovery was especially rapid in view of the laparascopic procedure used for the resection. 3 months later presents for relicensing consideration

? Decision
Assessment Considerations:

A Stage 1 Chromophoblic renal cell tumor confined to the renal capsule, with dimensions below 7cm, without invasion of the renal vessels and without any evidence of metastasis has an excellent prognosis. The disease specific 5-year survival rate is recorded at 95%.

Decision: Fit for Class I assessment subject to:

• Multicrew restriction
• 3 monthly follow up by uro-oncologist for the 1st year, 6 monthly follow up in the second year and annually after that.
• CT abdomen at the first review.
1. 46 year old ATCO.

2. She was first seen at KK Hospital in March 2005 when she was diagnosed to have uterine fibroids.

3. In June 2005 she had laparotomy and myomectomy done. The histology showed inflammatory myofibroblastic tumour and leiomyoma.

? Decision
1. In Jan 2006 at her 2nd post operative review she complained of right groin swelling and clinical findings as well as an MRI showed the presence of multiple masses in the pelvis and nodules in the abdominal wall.

2. A staging laparotomy on 16 Jan 2006, with total hysterectomy, bilateral salpingo-oophorectomy and removal of abdominal wall nodules, was carried out.

3. The histology showed leiomyosarcoma and she was staged at Stage IVB.

4. Post-op chemotherapy was also given.

? Decision
At the last review on 1 Aug. 2006 there was no clinically detectable disease.

The bone scan and hip X-rays also showed no evidence of recurrence.

Considerations For Decision Making:

- Prognosis is guarded in view of the stage and histology of the tumour.
- She will require frequent reviews and multiple sessions of chemotherapy for the expected recurrences.
- She remains quite weak and has not gained any weight.
- Psychologically she is very traumatised as she has been told that the prognosis is poor and may not survive for more than 24 months.
- She has given up thoughts of returning to work and would like to spend time with her family.

Decision: Unfit for Class III
Thank you for your kind attention!