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**MINOR ILLNESSES, PRESCRIBED MEDICATION,
OTC MEDICATION, HERBAL REMEDIES, MINERALS, SUPPLEMENTS,
ALCOHOL USE BY LICENCE HOLDERS, AND GENERAL VACCINATIONS**

1. Accidents and incidents have occurred as a result of pilots flying whilst medically unfit and the majority have been associated with minor ailments rather than overwhelming medical catastrophes.
2. Although the symptoms of colds, sore throat, diarrhoea and other abdominal ailments may cause relatively little problem in the normal course of events, they may become dangerous in the flying environment and air traffic work by distracting the pilots or the Air Traffic Controllers (ATCOs). Symptoms may also increase in severity in the altered environmental conditions of flight and some illnesses can produce subtle effects that are not obvious to the sufferer.
3. In addition to the effects of the illness, consideration must also be given to the effects of medication. Medication includes not only that prescribed by physician, but also over the counter (OTC) medication, herbal remedies and mineral and other supplements. Contrary to popular opinion, herbal remedies and supplements are not without side effects but these may be serious, especially in the flying environment. Licence holders using a new medication for the first time should always use it when they are not flying or not on air traffic control duties, in order to find out if they experience any unexpected side effects.
4. ANTIMICROBIALS include antibiotics, antiviral, antifungal and antiparasitic drugs. They may have short term or delayed side effects which can affect pilots' or ATCOs' performance. More importantly, their use usually indicates that a fairly severe infection is present, for which the effects of the infection most likely means that the person is not fit to fly or to control air traffic regardless of any effects of the medication taken.
5. PSYCHOACTIVE MEDICATION such as tranquilizers, antidepressants and sedatives by definition pass into the brain and can readily affect the ability to respond to any situation in a normal manner. The use of this group of medicines has been a contributory cause in fatal aircraft accidents. In addition, the underlying condition for which these medications have been prescribed usually means that a pilot's or ATCO's mental state is not compatible with their professional duties. After stopping the antidepressant, for the sake of clinical stability, a minimum of 3-month period of observation with no suggestion of recurrence of symptoms

and satisfactory medical and, if appropriate, peer monitor reports would be required prior to the consideration of recertification.

6. STIMULANTS such as caffeine, amphetamines (often called 'pep' pills) are used to maintain wakefulness or to suppress appetite. They are often habit forming and all of them may cause dangerous overconfidence. The use of such stimulants while flying or controlling air traffic cannot be permitted. However, drinks such as coffee or colas in reasonable quantities are acceptable.
7. ANTIHISTAMINES AND SLEEPING TABLETS are typically sedative in their action.
 - 7.1 Antihistamines are widely used to treat colds, hay fever and allergies. They may be in the form of tablets, liquids, nose drops or nose sprays. Some antihistamines are marketed as non-sedating. Some examples include fexofenadine (Allegra, Telfast), terfenadine (Seldane) and loratidine (Clarityne). However, even non-sedating antihistamines may have a sedating effect in some individuals, particularly when the patient is exposed to the reduced oxygen level found in pressurised aircraft cabins.
 - 7.2 For any sleeping tablets and sedative medication, it would take 5 half-lives before majority of the drugs would be eliminated from the body and be considered safe for flying. Half-life is the time required for 50% of the drug being eliminated from the body. Since each formulation of drug would have a different half-life, please consult your doctor or Approved Medical Examiner (AME) regarding the safe use of any sedative medication.
8. DRUGS FOR THE TREATMENT OF HIGH BLOOD PRESSURE have improved significantly in terms of benefits and relative lack of side effects. Following investigation and the initiation of treatment, most licence holders diagnosed with hypertension can continue in post. Most will respond favourably to certain general health measures and one or a combination of the following types of medication: sartans (angiotensin receptor antagonists); angiotensin converting enzymes (ACE) inhibitors; slow channel calcium blocking agents (CCBs); diuretics and beta adrenergic inhibitors. However, rauwolfia alkaloids, hydralazine, guanethidine, minoxidil and the alpha 1 blocking agents are not permitted. In all cases, the licence holder must use the medication for a minimum of 2 weeks without significant side effects on a stable maintenance dose and satisfactory blood pressure readings before being assessed fit to resume duty.
9. ANALGESICS fall into two broad groups: narcotic and non-narcotic. The most commonly used members of the narcotic group are opium derivatives, morphine derivatives, methadone group and meperidine group. They are incompatible with flying and ATC operational duties. The non-narcotic group includes aspirin and paracetamol (acetaminophen). Whilst they may be acceptable for use by a licence holder, the condition for which they are being taken is often

not compatible with professional duties.

10. ANTI-INFLAMMATORY DRUGS include steroids and the non-steroidal anti-inflammatory drugs (NSAIDs). Steroids have complex actions and are not suitable for licence holders without an aeromedical assessment. In recent years, increasing evidence of significant side effects in NSAID users means that they should be used with great caution by licence holders. Their use also indicates a significant medical condition.
11. LOCAL, REGIONAL, GENERAL ANAESTHETICS AND HEAVY SEDATION need to be completely cleared from the body before a licence holder resumes work, no matter whether they are used for dental work, surgery or an investigation. Following acupuncture and local anaesthesia, 12 to 24 hours should have elapsed before resuming work. For regional, general anaesthesia and heavy sedation, the interval should be a minimum of 48 hours.
12. MELATONIN is a hormone produced by the pineal gland. It is not a hypnotic and has not been shown to be useful as an aid to sleep. It may play a role in regulating an individual's circadian rhythm. There is evidence that taking melatonin following a vacation away from home may help the body readjust to home time. However, taken at a wrong time in an individual's circadian rhythm may delay recovery from jet lag. All hormones have an adverse effect if taken inappropriately. Long term adverse effects from melatonin may exist. In many countries, melatonin is available over the counter (OTC) as a food or herbal supplement. It is, therefore, not subject to the same regulations that govern prescribed medications. The quality and quantity of melatonin bought OTC cannot be guaranteed. ICAO Manual of Civil Aviation Medicine Part III Chapter 17 has useful information on Fatigue, Sleep and Aviation. Page III-17-6 discusses the use of melatonin in aviation. Any licence holder who is thinking of using melatonin is advised to discuss with an AME.
13. SILDENAFIL CITRATE (VIAGRA), TADALAFIL (CIALIS), VARDENAFIL (LEVITRA AND STAXYN) and other medications are used to treat erectile dysfunction. All have side effects that are important in the flying environment. These include disturbance of vision, especially colour vision, dizziness, flushing, headache and diarrhoea. Duration of side effects can be as long as 36 hours. Viagra has the shortest half-life but should not be used within 10 hours prior to reporting for flying duties. Cialis has a much longer half-life and the interval should be not less than 72 hours. Vardenafils are intermediate in terms of the duration of side effects.
14. COMBINATION MEDICINES are commonly marketed and it is essential that the individual licence holder knows what medication he is taking and discusses with a physician who is knowledgeable about the effects on the individual constituents, interactions with other substances and the working environment.

15. ALCOHOL, DRUGS AND PSYCHOACTIVE SUBSTANCES, even if consumed outside the workplace, can lead to employee impairment while at work. Poor concentration, carelessness, risk-taking behaviour and errors in judgement can occur. It has been well established that even small amounts of alcohol in the blood not only affects work performance, but also results in higher rates of injuries, fatalities, absenteeism as well as reduced productivity. There is no “safe limit” of alcohol consumption. Licence holder should not operate as flight crew or ATCO with any level of alcohol in their body or whilst suffering from the after effects of alcohol intake, even if the blood alcohol level is below detectable level.
 - 15.1 In aviation, detection of alcohol, drugs and psychoactive substances, including prescribed medications that can cause impairment, is critical to establishing safe operations for all people involved in the operation. A safe operation is the fundamental objective of the management of impairment related to alcohol, drugs or psychoactive substance use. Reasonable steps should be taken to ensure that impairment does not exist. Impairment detection is evidenced by the use of tests for detectable levels of alcohol, drugs or other psychoactive substances. Should a positive result be found, a licence holder must be considered impaired. The immediate effect of this is that the person tested should cease work in safety critical roles until they are considered no longer impaired.
 - 15.2 It is impossible to give a precise formula to calculate when the blood alcohol level will fall to zero after a given amount of alcohol has been consumed, but the larger the amount of alcohol taken, the longer it takes to be cleared. All licensing authorities require a period between drinking alcohol and exercising the privileges of a licence, ranging from 8 to 24 hours. Hong Kong Civil Aviation Department requires a minimum of 8 hours but may need to be longer depending upon the amount of alcohol consumed.
16. PSYCHOACTIVE SUBSTANCE ABUSE refers to the inappropriate use of prescribed medication or alcohol or the use of illicit “recreational” drugs. Psychoactive substance abuse is not acceptable in the case of a licence holder. It shows either a willingness to violate civil law or that the individual is not in control of his consumption of the substance. In both cases the licence holder is unsuitable for undertaking safety critical aviation functions. Successful rehabilitation makes it possible for the individual to regain his/her licence but his/her return to flying or ATCO duties will require supervision by an AME and an Approved Medical Assessor (AMA).
17. For GENERAL VACCINATIONS such as hepatitis, varicella, and influenza, aviation-related duties should not be undertaken for 24 hours after receiving each dose of vaccination.
18. The websites below are useful references. However, in all cases of doubt the licence holder should consult a physician, preferably one specialised in aviation medicine:-

ICAO Medical Manual

www.icao.int/publications/Documents/8984_cons_en.pdf

FAA

<http://www.leftseat.com/medcat1.htm>

https://www.faa.gov/licenses_certificates/medical_certification/media/OTCMedicationsforPilots.pdf

Aviation Medicine Advisory Service

<https://www.aviationmedicine.com/medication-database/>

CASA

<https://www.casa.gov.au/licences-and-certification/aviation-medicine/medication>

<https://www.casa.gov.au/licences-and-certification/aviation-medicine/medical-treatments-procedures-and-investigations>

19. The following article gives a good overview of herbal remedies in relation to flying:-

Aviation, Space and Environmental Medicine – Volume 71. No. 1 – January 2000

<http://www.leftseat.com/pdf/files/herbf.pdf>

20. **AIC 07/21 is hereby superseded.**

The Circular is issued for information, guidance and necessary action
by direction of the Director-General of Civil Aviation
Victor LIU