



It's only a cold !

By Dr. Dougal Watson

So your throat is sore, your nose running, and your head throbbing as if to burst. You can't help speaking with a characteristic nasal twang causing friends and colleagues alike to comment or ask "Got a cold have we?". Between coughs and sniffles you're forced to reply "Yair but it's not a problem. It's only a little cold, I should be over it in a couple of days !".

This is a familiar story around most homes and workplaces and indeed a cold usually isn't much of a problem. The situation could be very different if, however, you plan to travel in an aircraft while suffering from this usually inconsequential ailment.

I'd like to tell you a little bit about colds, what they are, what they do to your body, and most importantly how these effects can alter your suitability to pilot an aircraft. This should allow you to make an

informed decision, the next time you've got a cold, concerning your fitness to fly.

A cold is proper cause for taking the responsible action of voluntarily and temporarily grounding yourself from flying. I've suffered the pain and distress of bilateral haemotympanum (that's bleeding into the ear drums of both ears, the stage before perforation or rupture of the eardrums) during an aerobatic spin sequence when, unknowingly, I was brewing a cold. I've also seen usually stout military aircrew reduced to tears of pain during descent because having a cold rendered them unable to clear the pressure in their facial sinuses(1). Although a minor ailment to most folk a cold is a potential disaster to aviators (and those that fly with us).

What is a cold ?

A cold is an infection, caused by any one of a hundred or so related rhinoviruses (2). It usually takes one or

two days for a cold to incubate or brew once you've 'caught' it.

The first symptoms you notice are usually tiredness and irritability along with a tickly, scratchy throat, blocked or runny nose, and a mild headache. The runny nose (rhinorrhoea) usually increases over the next couple of days and then settles rather rapidly as the whole illness resolves. Bouts of sneezing may also occur. A fever is unusual during the common cold. A small number of people (around 1 - 2%) will develop bronchitis at the same time and have a cough that produces quantities of sputum (phlegm).

Most of us use the word 'cold' in reference to any illness or infection of the nose, throat, ears, and lungs that involves a runny nose or mild cough. Many other viruses (3) are also able to cause diseases similar to the common cold. The illness caused by these other viruses is often more severe than a common cold and may involve quite marked cough, fever, sore throat, or even pneumonia.

The common cold, along with any of the above mentioned viral upper respiratory tract infections, is often more severe in children.

You won't be surprised to hear that colds are more common in the Winter and Autumn. Nobody is certain why this is the case but it may have something to do with the increased time we all spend indoors close to other people during the colder months.

For the purpose of this article I'm not going to distinguish between all of these related but different illnesses. I'm simply going to use the word 'cold' to denote any, or all, of the above - after all they have similar relevance to aviators.

What happens during the infection?

The offending virus usually gains access to your body through the lining tissues of your upper airways, especially the nose or throat. It invades the cells there and sets about doing what viruses do best, trying to

produce more of its kind and send them forth into the world to infect other cells and produce even more viruses. To do this the virus must hijack machinery and equipment within the cell. This machinery is reserved for the cell's privileged use and the hijacking may set off alarms and alert the body's defence (or immune) system.

As the virus multiplies the cell may rupture and millions of new viruses spill into the bloodstream or nearby tissues. This release of new viruses may also alert the immune system's equivalent of 'customs and immigration', ever watchful for viruses without visas. The release of new viruses causes the cell to die and the immune 'homicide squad' may also be called.

The alerted immune system then mobilizes to seek and destroy all viruses, bits of viruses, and hijacked, infected cells. This is usually achieved rapidly and the illness rarely lasts much longer than a few days. This response almost invariably results in swelling

of the infected areas as the battle rages between the immune system and the infecting virus.

Once a virus has been vanquished the immune system 'remembers' it, and is able to recognize its closer relatives, for a time. It is still possible for a not-so-closely-related virus to cause another cold soon afterwards and the memory eventually fades so that the same virus may again cause a cold some time in the future.

You can spread a cold to others because as you breath out virus particles may leave your nasal area in the air or within tiny fluid droplets. If someone near you breaths in some of the virus particles the whole process may start afresh in their nasal passages.

How can a cold affect flying ?

The two features of a cold that are most important to aviators are the overflow of new viruses into the

bloodstream and the swelling of nose and throat tissues.

The first of these, the release of new viruses from their host cell into the body is often called the 'viraemic phase' (4). This viraemic phase usually results in the headaches and general feeling of tiredness, lethargy, and unwellness (5) that is usually associated with a cold.

Anything that makes you feel tired and unwell is a distraction from flying and may well impair your decision making abilities at a critical moment. The viraemic phase of a cold is no exception and our mental and physical performance is always impaired. As aircrew we can ill afford any impairment of our performance that may affect our safety and that of the craft we fly and those that choose to fly with us.

As the tissues lining the nasal area swell the tiny openings to the ears (eustachian tubes) and the sinuses (ostia) become narrowed and may close over. Closure of these small tissue lined tubes makes ear and sinus

pressure equalization difficult or impossible. Inability to equalize our ears and sinuses during ascent or descent may result in pain and tissue damage. The term barotrauma (as in barometer) is used to refer to these pressure related tissue damage.

The pain of sinus and ear barotrauma can be of crippling intensity leaving the sufferer unable to devote attention to the task of flying. The tissue damage, which could include rupture of the ear-drums or the filling of a sinus with blood, may adversely affect our short and long term "fitness to fly". It's really not worth the risk.

What can you do ?

The first action for an aviator with a cold is the simplest but often the most difficult. When you have a cold you are most certainly not fit to fly. It's as simple as that, the risks are just not worth it. To fly whilst suffering a cold a professional aviator would be exposing his passengers, cargo, and employer to

an added, avoidable risk while a sports aviator exposes himself, his passengers, and his craft to the same unnecessary risks.

As an air passenger you are still exposed to the same risks during a cold. It is unlikely, though, that as a passenger you could cause the wreck of an aircraft or the injury of others. Should you choose to travel by air as a passenger while you've got a cold there's a few things you might find useful knowing.

There is no cure (yet) for the common cold! Our immune system is the only avenue we have for ridding our body of the cold virus. To function at its peak our immune system must be maintained by a sensible and well balanced diet. Large doses of vitamins or mineral supplements do not cure the common cold. The body also requires adequate rest for its immune system to remain in peak condition.

Antibiotics do not cure colds! Viruses are immune to antibiotics. It is only when the cold is likely to become complicated with a second, overlapping bacterial

infection that antibiotics have any place at all in the management of colds. Anyone healthy enough to maintain an aircrew licence is extremely unlikely to suffer any bacterial complications of a common cold.

It is only if the cold symptoms are sufficiently severe that medication has any place in the treatment of a cold. Even then the only effect that medicine will have is some relief of the symptoms. Medication can't cure or dispel a cold. Aspirin (6) or Paracetamol (7) will help to relieve a headache or sore throat and may settle a mild fever. Decongestants (8) will reduce some of the swelling of the nasal lining tissues and may make it easier to equalize the ears or sinuses. It may also be possible to relieve an irritating cough with a cough mixture or tablets.

Conclusion.

* A COLD IS AN UPPER RESPIRATORY TRACT INFECTION CAUSED BY ANY OF A LARGE NUMBER OF VIRUSES.

* THERE IS NO CURE FOR A COLD, THE BODY'S IMMUNE SYSTEM MUST BE ALLOWED TO FIGHT THE INFECTION.

* ADEQUATE REST AND A SENSIBLE DIET ARE THE BEST WAYS TO HELP YOUR IMMUNE SYSTEM.

* FLYING WITH A COLD IS JUST NOT WORTH THE RISK

Footnotes.

1. For more information on the effects of pressure changes on sinuses refer to AOPA Australia magazine, April 1990. 'The effects of ascent and descent on gas collections within the body'.
2. Rhinovirus is the Latin family name for this group of viruses. "Rhino" means nose, hence rhinoceros, rhinoplasty (nose job), and rhinorrhoea (runny nose, cf diarrhoea). Thus rhinovirus translates, literally, as nose-virus.

Rhinoviruses can cause other illnesses including croup, bronchitis, and pneumonia. You can also be infected by these viruses without suffering any discernable disease.

3. Influenza, Parainfluenza, Respiratory Syncytial-, Adeno-, Coxsackie-, Echo-, Corona-, and Herpes viruses can all cause illnesses similar to the common, rhinovirus, cold.
4. More Latin I'm afraid. Viraemic simply means 'virus in the blood' from vir- for virus, and -aem for blood (remember anaemia and haemoglobin).
5. A clumsy word but probably better than 'malaise', the more correct medical term.
6. Aspirin is available in many brand names including, in Australia, Aspro, Disprin, and Winsprin.
7. Panadol and Dymadon are two common brand names for paracetamol tablets in Australia. Tylenol is a common US and Canadian brand (In N. America paracetamol is called acetaminophen).
8. There are many different decongestant preparations available in spray, tablet, mixture, or capsule form. Many decongestants are combined with paracetamol

or aspirin and codeine in combination 'cold tablets'.

It is advisable to seek the advice of your DAME before using decongestants as an air passenger.