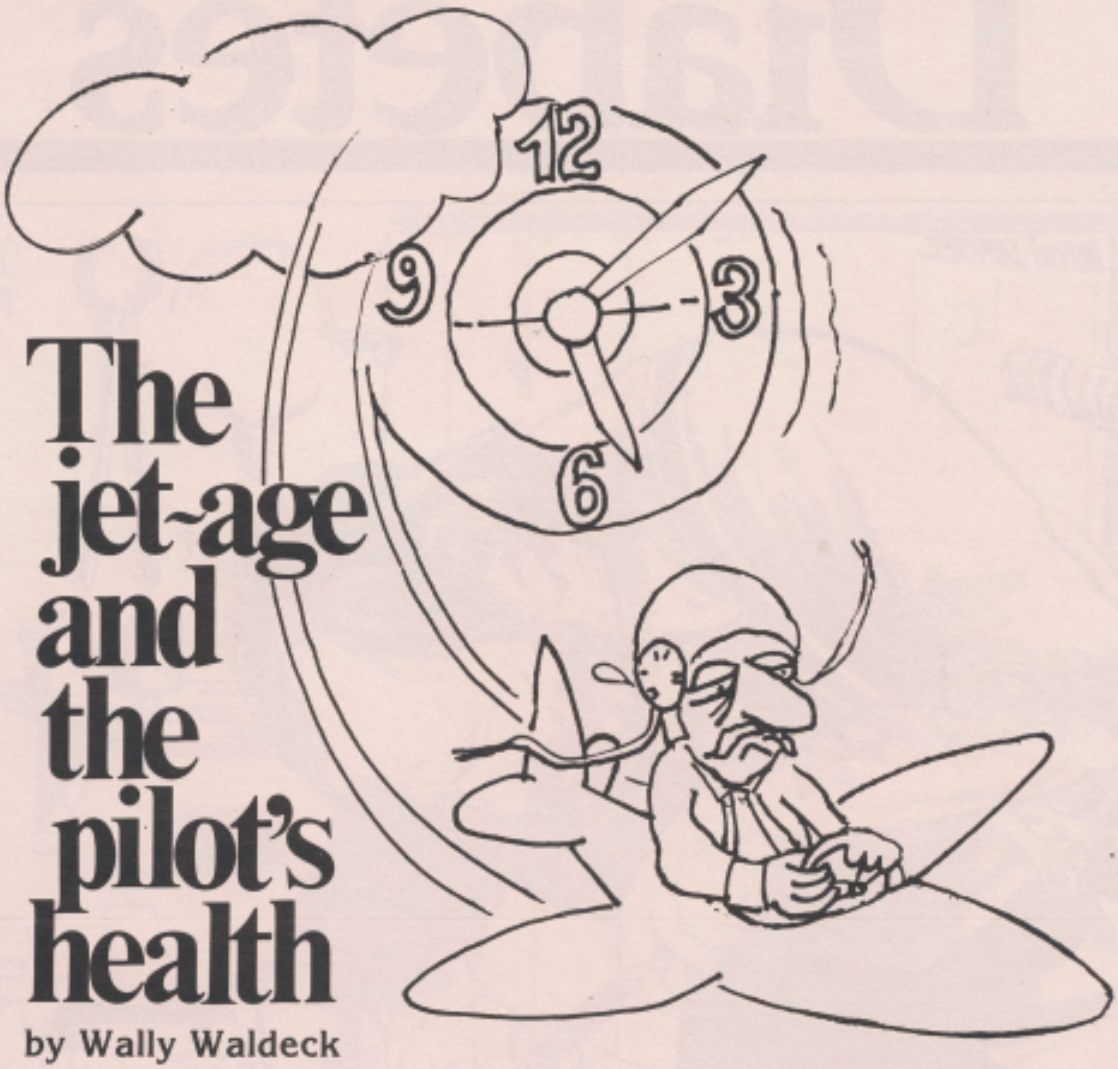

The jet-age and the pilot's health

by Wally Waldeck

You have probably heard it all before: "This is your captain speaking, and we are now flying at 9,000 m and just coming into view, on your right is Lesotho . . ." And so forth.

About 10 vibrationless very wide gallops a minute, it's all pleasurable, entertaining in a way, and above all, relaxing transportation.

But for the men on the flight deck it is not all that rosy.

Jetliners are not flown quite the way piston-engined aircraft are: already the jet pilots today are being strapped into supersonic pressure cookers in many respects.

What has happened is that today's jet evolution has outstripped that of the pilot's.

A doctor dealing in aviation medicine reports that jet pilots he treats professionally as well as in private practice, show signs of fatigue and nervous tension. An indication is the number of them who ask for sleeping pills.

Common complaints are: "I slept in four different countries on four different nights and, when I woke up, I could not remember quite where I was." Another: "I climb out of bed as tired as I was when I went into it."

Fatigue can be of two types — acute and chronic. The acute stage is a normal reaction to everyday living and is relieved by eights hours of sound sleep.

(Of course, there is the old pilots' adage of eight hours before throttle and bottle — not that it applies specifically here.)

The chronic type of fatigue may manifest itself as pain in the vicinity of the heart, palpitations, breathlessness, headaches and irritability. It can also give rise to gastro-intestinal symptoms and general aches and pains.

Jet flying has placed many pilots in the chronic fatigue category, according to the doctor.

There are several reasons contributing to this form of jet fatigue, all of them directly pertaining to the greater speed of airliners. This increase in speed doubles productivity and increases the workload. Trips are shorter, sure, but more flying hours are required to fill a pilot's monthly quota. Consequently a jet pilot may be making twice as many take-offs and landings in his quota period than he formerly had to do in piston-engined aircraft, although his total monthly hours may have been much the same.

East-west flights bring many problems as they invariably cross many time zones, thus raising havoc with body rhythm, sleep patterns, eating and elimination schedules.

Another subtle strain borne of necessity further contributes to the jet captain's lot: the over-regulation of flying procedures. Pilots live in constant fear of infractions.

They are not only strapped in their seats but also legal straight jackets. Add to this irregular trip scheduling, stand-by duty time, instrument rating, and medical renewals, together with periodic checkouts and refresher courses, the pilot's life becomes increasingly complex.

A questionnaire directed to the wives of jet pilots provided the following analysis: of the 100 wives interviewed, only 16% reported little or no change in their husbands since their transition to jets.

Some significant change in health and welfare in their men was reported by 84%; 57% were more irritable; 67% changed sleeping habits and 75% complained of being tired.

A substantial minority drank and smoked more, while 32% reported a changed attitude towards sex in their mates. Fifty percent altered eating habits, 39% "do not enjoy the children as much," and 27% changed emotional stability.

A number of wives said their husbands returned home from trips unable to get a whole night's sleep. They were so tense it took them a long time to unwind.

The same questionnaire directed to the wives of piston-engined pilots reflected percentages heavily on the side of no significant change. None expressed the alarm and concern so frequently found in

the jet group.

These comparisons, while allowing for slight variations and occasional inaccuracy, are nonetheless too significant to be ignored.

With regard to time changes experienced in east-west flights, the doctor undertook a flight to the Far East from the United States and back, testing on himself the effects of in-flight conditions, rest periods, food and time changes.

This is what he found:

'Our daily life is full of conditioned reflexes. We live by the sun and sleep by the stars. Nature has ingrained an associated physiological response; our hormones secrete maximum concentration at 0600 hrs to prepare us for the daily toil.

As the day progresses there is a gradual decline in the concentration of this adrenal hormone, so that by 1800 hrs the hormone level is at its lowest — that is why we are tired, we need a drink, rest, and eventually we need sleep.

Flying from New York to Europe (in this case), leaving at noon, it is 1800 hrs on the Continent and by the time the crew has settled down in the hotel on the other side it is 0300 hrs the following day local time but only 2100 hrs in New York.

By the time you have relaxed, had a bath and gone to bed, London civilisation is on the move. The confusion of city noises, aircraft overhead, traffic noises, the clatter of breakfast dishes, arriving and departing crews, are not conducive to sleep.

Even if you sleep through this, your alarm clock adrenal glands (set to home time) shoot off a healthy barrage of hormones to prepare you for the day's activity, so up and at 'em, you cannot sleep.

Sitting in your 600 mph office, calling the shots, conditioned behaviour and automatic reflexes enter the picture. Because these reflexes are automatic, when tired you will breeze through the checklist, checking switches like a flailing windmill — not looking at what your fingers touch or thinking what they have done.

Your automatic or conditioned behaviour takes over and because you are tired errors may go unnoticed. So off you go with 40 degrees of flaps instead of 30 and when it is time to rotate for take-off at full gross you are apt to become another statistic in the accident files.'

Checklist

Here are some general recommendations you give to your pilot-patients

In general

- If overweight, reduce to the standard recommended for your weight and height.
- Get some daily form of exercise. Follow approved calisthenics, or walk two miles a day.
- Minimise tobacco consumption to 10 cigarettes a day. Better yet, switch to a pipe if you cannot stop altogether.
- Follow a high protein diet.
- Before and during flights eat small and frequent meals.
- Take vitamins.

Pre-flight

- Avoid long exposure to the sun before flying.
- Lie down and rest before duty hours.
- Do not engage in strenuous sport before flight.

In-flight

- Dehydration or water imbalance in the body is always present in pressurised aircraft. Drink a glass of liquid every hour aloft. This will help ward off constipation too. Go easy on coffee, as caffeine further stimulates dehydration.
- Stretch your legs frequently.
- Do not stare into the sky. Sweep the instrument panel and the flight deck with your eyes. This gives contrast and preserves accommodation.

Post-flight

- Take a hot bath and lie down, even if you cannot sleep.
- Sleeping pills are like sin, so you probably take them. If you do, allow plenty of time for the toxic effects to wear off, say some 10 hours before departure. Toxic effects of certain types of pills may be enhanced three times by additional intake of alcohol. (The same applies for barbiturates to a lesser degree.)
- Avoid rich and heavy foods.
- Take two aspirins for headaches and vague pains.
- Have a massage if possible.
- Take a little extra salt if you have been sweating or have diarrhoea.
- Remember that overtime, overpay, and overfatigue go hand in hand.

The jets have revolutionised air travel. The human factor is lagging behind.

Above all, fitness of the flight crew is a prime concern.

Nuwe kursus aangebied in bedryfs-verpleegkunde

Die Potchefstroomse Universiteit vir Christelike Hoër Onderwys bied van aanstaande jaar af 'n tweejarige diplomakursus in Bedryfsverpleegkunde aan. Die kursus sal by die Vaalrivierse Tak van die Universiteit op Vanderbijlpark aangebied word.

Prof. E. Coertse, hoof van die departement Verpleegkunde aan die PU vir CHO, sê daar bestaan lank reeds 'n sterk behoefte aan gespesialiseerde opleiding vir verpleegsters in die nywerheid. Dié kursus, die eerste van sy soort in Suid-Afrika, behoort in die behoefte te voorsien.

Toelatingsvereistes

'n Student wat die Diploma in Bedryfsverpleegkunde wil volg, moet in besit wees van 'n matrikulasie- of matrikulasievrystellingsertifikaat sowel as 'n graad óf diploma in verpleegkunde. Die student moet by die Suid-Afrikaanse Raad op Verpleging geregistreer wees as algemene en verloskundige verpleegkundige, óf algemene en psigiatriese verpleegkundige óf algemene verpleegkundige en enige diploma wat by the Suid-Afrikaanse Raad op Verpleging geregistreer is, bv. diploma in verpleegonderwys, óf algemene verpleegkunde.

Voorkeur sal gegee word aan studente met 'n dubbele kwalifikasie.

Duur

Die duur van die kursus sal twee jaar wees. Dit word oor agt voltydse weke, ongeveer elke derde maand, aangebied. Die eerste siklus van agt weke begin in Februarie met eksamens aan die begin van November van elke jaar.

Die kursus word by die Vaalrivierse Tak van die PU vir CHO aangebied, behalwe die tweede en derde siklusse in die eerste jaar wat in Mei en Augustus op die Hoofkampus op Potchefstroom aangebied sal word.

Prof. Coertse sê die kursus is so saamgestel dat personeel nie te lank weg van die werk af sal wees terwyl hulle die kursus volg nie.

Leerplan

Die leerplan vir die kursus bestaan uit die volgende vakke: bedryfsverpleegkunde, bedryfsosiologie, bedryf- en personeelsielkunde, volkekunde en demografie, toegepaste bedryfswetgewing, bedryfsiektes en -beserings, patologie, bedryfstosikologie, bedryfshigiëne, mikrobiologie en immunologie, bedryfsfisiologie, bedryfsfisika, chemie vir bedryfsverpleegkunde.

Praktiese Onderrig en Besoeke

Vir praktiese onderrig is die nywerheidshospitaal van Yskor op Vanderbijlpark beskikbaar gestel. Besoeke sal ook gebring word aan dermatologiese en oogheelkundige klinieke, rehabilitasiesentrums, ongevalleafdelings, bedryfshospitale, myne en ander bedryfsorganisasies.

In die tweede studiejaar van die kursus moet 'n skripsie oor 'n goedgekeurde onderwerp ingehandig word.

Voornemende studente wat in die kursus belangstel, moet daarop let dat dit die student se eie verantwoordelikheid is om studieverlof en kontrakreëlings te tref. Dit moet vroegtyd gedoen word.

Die Diploma in Bedryfsverpleegkunde word deur die Suid-Afrikaanse Raad op Verpleging as 'n bykomende kwalifkasie erken. Dié Raad het die PU vir CHO ook amptelik aangewys om die kursus aan te bied.

Nuwe inskrywings vir die kursus sal net elke tweede jaar gedoen word omdat die een groep eers hul opleiding moet voltooi voor die opleiding van 'n volgende groep mag begin.

Die kursus word van 1982 af aangebied, mits daar genoeg aansoeke is. 'n Maksimum van 25 studente kan aanvaar word.

Aansoeke moet gerig word aan die Registrateur, PU vir CHO, Potchefstroom 2520.

For further information circle **No 202**