

Stress prevention in air traffic control

Air traffic controllers are widely recognized as an occupational group which has to cope with a highly demanding job that involves a complex series of tasks, requiring high levels of knowledge and expertise, combined with high levels of responsibility, not only with regard to risking lives, but also the high economic costs of aeronautical activities.

The ILO commissioned a manual on *Occupational stress and stress prevention in air traffic control* by Professor Giovanni Costa (CONDI/T/WP.6/1995), which reviews the sources and consequences of stress in air traffic control and the measures which have been taken in a number of countries to prevent and reduce stress in the occupation. The manual is available upon request from the Conditions of Work Branch. The following section is taken from the manual. (For information on *air rage*, see our pages on violence at work.)]

Sources and consequences of stress in air traffic control

Surveys show that the main sources of stress reported by air traffic controllers are related both to the operative aspects of their job and to organizational structures. In the former case, the most important factors are peaks of traffic load, time pressure, resolving conflicts in the application of rules, and the limitations and reliability of equipment. The factors relating to organizational structure mainly concern shift schedules (and particularly night work), role conflicts, unfavourable working conditions and the lack of control over work.

Analysis has emphasized the complexity of the work of air traffic controllers. For example, the cognitive/sensory capacities required for high performance at radar workstations include spatial scanning, movement detection, image and pattern recognition, prioritizing, visual and verbal filtering, coding and decoding, inductive and deductive reasoning, short- and long-term memory, and mathematical and probabilistic reasoning. Air traffic controllers are also among the groups of workers who are most exposed to *critical accidents* which cause unusually strong emotional reactions, such as air accidents with loss of life or serious injury, near collisions or loss of control due to overload.

However, the consequences of these stressors on the performance of individual air traffic controllers may differ widely in relation to factors such as age, life style, work experience, personality traits, attitude, motivation and physical and mental health. Indeed, many studies on the consequences of stress on air traffic controllers have reported apparently contradictory findings. Nevertheless, a number of studies indicate that the demanding work of air traffic controllers may well be a risk factor in the long term in the development of stress-related symptoms, including headaches, chronic fatigue, heartburn, indigestion and

chest pain, as well as such serious illnesses as hypertension, coronary heart disease, diabetes, peptic ulcers and psychoneurotic disorders.

Prevention of stress for air traffic controllers

In view of the safety and operational implications of the service provided, the air traffic control profession is understandably under close scrutiny at many levels. These range from the Air Navigation Commission of the International Civil Aviation Organization (ICAO) to regional and national bodies. In Western Europe, for example, the various national air traffic control systems come under the umbrella of the EUROCONTROL International Convention. It is therefore hardly surprising that many measures have been taken to improve the health and safety of air traffic controllers, including stress prevention programmes. Air traffic controllers have to pass regular physical tests in order to retain their operating licence, which provides them with an added motivation to maintain themselves in good physical condition.

Based on a wealth of practical examples, the manual reviews the various interventions which have been made in the following areas:

- the *external socio-economic environment*, including national legislation, international and national directives and social support, in terms of facilities such as transport to work, canteens and sleeping facilities;
- *technology and work organization*, including the improvement of job planning and the reliability of work systems, the reduction of working times and the arrangement of work teams and rest pauses in accordance with work load, the arrangement of shift schedules according to psycho-physiological and social criteria, and approaches to improve the participation of air traffic controllers in decisions which concern them;
- *the workplace and the structure of tasks*, with particular reference to the ergonomic design of workstations and improvements in work environment factors, such as lighting, noise, micro-climatic conditions and indoor air quality;
- *the improvement of individual responses and behaviour*, through guidance in individual ways of coping with stress, measures related to selection and training, and counselling and other supporting measures, including critical incident stress management; and
- *health protection and promotion*, with emphasis on the conversion of medical surveillance from a process predominantly concerned with the formal certification of *fitness for work* into a more positive intervention designed to maintain and improve the health and well-being of air traffic controllers.