



# Stressed and Fatigued on the Ground and in the Sky:

Changes from 2000 – 2007 in civil aviation workers' conditions of work

A global study of 116 countries in Africa, Asia/Pacific, Middle East, North America, Latin/South America, and Europe in the post – 9/11 era

International Transport Workers' Federation,  
Civil Aviation Section, London, United Kingdom, 2009





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# FATIGUE STUDY

## INTRODUCTION:

This study highlights the changes in Civil Aviation workers' conditions between 2000 and 2007 and is being published just as the Civil Aviation Section of the ITF turns 60 years old.

The first Conference of the Section was held in October 1949 when the jet-propelled civil aircraft was still a few years away from being commercially exploited, and air travel for ordinary people was a prospect only a few visionaries could see. The ITF was just re-starting its activities in earnest following the end of the Second World War, and existing aviation affiliates were already demonstrating their long-term perspective by pressing the ITF to take a "close look not only at working conditions but at safety" in the aviation industry.

Workers today would not recognise the world of civil aviation in existence then. Over the course of the following 60 years, scientific and technological progress made civil air transport a crucial part of the transport mix. Technological progress brought positive changes but also many challenges for aviation employees, and had a profound impact on their working conditions.

The real problem however came with deregulation, starting at the end of the 1970s and eventually leading to the disappearance of thousands of high quality jobs along with most of the 'legacy airlines' that provided them. Neo-liberal dogma dictated that the best course for the industry was to privatise and to outsource as many of its operations as possible. Time would unfortunately prove this strategy to be ineffective and potentially dangerous – an ICAO study from 2005 found that too much liberalisation has led to the loss of control over safety.

Unfortunately there has been no let up in the liberalisation and deregulation agenda in the intervening decades. International competition, mergers, alliances, and cost-efficiency strategies are still being pursued relentlessly, increasing the already intense pressure in an industry that is not only characterised by cut-throat competition but which is also painfully exposed to external factors such as security concerns and economic crises. All this of course has had a direct impact on jobs and the working conditions of those employed in the industry.

In this scenario, low-cost carriers push yet further the boundaries of what their workers, and even what passengers will put up with. And they don't stop there. Local airports and service providers are also forced to lower their charges and to provide 'flexible' and cheap labour or face the threat of abandonment by such carriers.

These companies use their workers to the limit in their quest to lower running costs and to advertise the lowest fare. Sadly, many passengers are still taken in by the creative fare structures that obscure the true cost of many flights. And the drive to infinitely lower fares continues, despite concerns about its implications for both passenger and crew safety raised by trade unions.

In the period covered by this study, statistics show that global air passenger traffic, air freight volume and revenues have gone up. However, while the industry has grown, civil aviation workers have faced a steady decline in their conditions in all regions. This groundbreaking study on fatigue by the ITF's Civil Aviation Section examines the reasons for this in the context of the changes within the industry. One thing is very clear – this is an extremely serious problem for our workers, and we have to fight back.

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This study, while valuable in itself, has a broader importance. The findings will help us to develop an international campaign that addresses the common concern of stress and fatigue but in a way that focuses effectively on the specific needs of each of the three very different groups of civil aviation industry workers: air traffic services and ground staff (whose work involves shift work), and crew members (whose work involves frequent changing of time zones).

Many unions are already involved in national activities to address this problem. An ITF campaign would aim to support those activities and encourage action in countries that aren't currently involved in such initiatives. An international campaign would also serve to focus international attention. National campaigns would benefit from the effects of major worldwide coordinated actions. Other solutions, such as international minimum standards, will require pressure at the relevant international level.

A global campaign will illustrate the fact that this problem is not confined to one country or group of countries. It is experienced in all countries in all parts of the world.

Gabriel Mocho Rodriguez  
ITF Civil Aviation Section Secretary



## SECTION I: EXECUTIVE SUMMARY

At their International Congress, in Durban, South Africa in 2006, ITF delegates reported a serious and noticeable increase in stress and fatigue among their members, an increase that had become progressively worse, in particular since 11th September 2001. Was this a perception or a real phenomenon, and if real, what were the causes and what could be done to ameliorate the situation? In an attempt to answer these questions, the ITF undertook a global study through all of its affiliated trade unions, in 116 countries, in all regions of the globe – Africa, Asia/Pacific, Middle East, North America, Latin/South America, and Europe – to examine changes between 2000 and 2007 that might have led to what appeared to be a dramatic and global increase in stress and fatigue. Changes between 2000 and 2007 were examined amongst cabin crew, ground staff workers, and air traffic service workers. The empirical results presented in this report are based on the assessments obtained from union affiliates in all regions, not from the individual members of each affiliate. The ITF and its affiliates represent 800,000 civil aviation workers worldwide.

This report describes what happened to civil aviation workers around the world between 2000 and 2007. The study examined the changes that took place globally between those years. The year 2000 was used as a baseline in order to give an idea of conditions before 9/11.

The findings of this investigation reveal a disturbing picture of a steady decline in conditions faced by civil aviation workers in all three occupational groups, in all regions, between 2000 and 2007. The results show that indeed, stress and fatigue among civil aviation workers became global in nature between 2000 and 2007, and this pandemic has worsened progressively since 2000 (the term 'pandemic' here refers to a situation prevalent throughout an entire country, continent, or the whole world. In this context, the pandemic refers to the marked increase of stress and fatigue in civil aviation workers, on a global scale).

A dramatic and global increase in stress and fatigue in civil aviation workers is not a condition that would occur naturally. The conditions that continuously adversely affected the health and wellbeing of civil aviation workers were created by objective factors, many of which could have been improved with concerted agreement and action. Indeed, the decline in conditions appears to be largely a direct outcome of the events of 11th September 2001 and the major changes in the industry that it triggered. Overall, the findings appeared quite consistent globally.

One thing emerged from this study as absolutely clear: the conditions of labour need to be improved, and improved significantly, both for workers and for public safety.

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## SOME OF THE MOST STRIKING FINDINGS FROM THIS STUDY:

- 1) For cabin crew, air traffic service and ground staff workers around the world long/odd hours, physical work and lack of rest were the factors cited most often as contributing to fatigue.
  - Among cabin crew, long/odd hours and lack of rest contributed most to fatigue.
  - For ground staff, long/odd hours and physical work contributed most, closely followed by mental work.
  - Among air traffic service workers, mental work was the most significant cause of fatigue.
- 2) Overtime work among cabin crew was strongly associated with mental fatigue. The conditions that were found to provoke severe fatigue in cabin crew caused them to have concerns about their ability to provide service to passengers and react to potential safety and security threats.
- 3) Working under constant pressure increased progressively between 2000 and 2007, and caused ground staff workers to become emotionally and physically drained.
- 4) Significant associations were observed between constant pressure due to heavy workloads and 'burnout' (feeling completely used up) among cabin crew, ground staff, and air traffic service workers.
- 5) A majority of air traffic service workers reported having to work very fast and feeling used up at the end of the workday. Similarly, a significant number of air traffic service workers around the world worked under constant pressure that caused them to become emotionally drained.
- 6) Among cabin crew, air traffic service workers and ground staff, half of all representatives reported that between 2000 and 2007 there were increases in intimidation by management.
- 7) Among cabin crew, air traffic services and ground staff, the majority of their representatives reported both increases in unmanageable workloads and in disciplinary charges brought against workers by managers, between 2000 and 2007.
- 8) Regions with expanding civil aviation markets, such as Asia, have experienced an increase in precarious forms of work and a decrease in stable employment in the region between 2000 and 2007, evidenced by:
  - Increased job outsourcing in all regions, and
  - A substantial increase in the percentage of short-term contracts (contract of less than one year), in most regions.

Flexible work arrangements may be favoured under expanding industry conditions, as these provide new jobs. However, where there is growth in the industry it takes place in precarious forms of work.

- 9) Regions with "mature" or "saturated" markets, such as Europe and North America, were significantly associated with:
  - Precarious conditions of work
  - Increased job demands
  - A lack of support
  - Emotional fatigue.

These factors, known to contribute to chronic stress and fatigue, are made worse in a climate of "downsizing", where workers fear losing their jobs. Precarious conditions of work have increased in regions with both expanding and decreasing markets.

- 10) The higher frequency of using temporary and contract labour workers in 2007 compared to 2000 was associated with a higher level of reported overall work stress among all three groups of civil aviation workers.
- 11) In all regions, between 2000 and 2007 regular shift work patterns decreased among both cabin crew and ground staff workers:
  - 42% of European ground staff workers had regular shift patterns in 2000 but by 2007 this number had fallen to 36%.
  - In North America, no (0%) ground staff workers had regular shift patterns in 2000 and by 2007 still no (0%) ground staff workers in North America had regular shift patterns.
  - In the Middle East, no (0%) ground staff had regular shift patterns in 2007.

Where regulation is stronger (eg in Europe) unions have the possibility of having stronger influence in shift assignment and rostering. The findings indicate the need for stronger regulation in all regions and greater union influence in the organization of work.

- 12) 80% of cabin crew reported an increase in flight hours between 2000 and 2007.
- 13) Cabin crew and ground staff were the victims of significant increases in all types of abusive behavior between 2000 and 2007. Air traffic service workers suffered increased verbal abuse by other workers.
- 14) Salaries, promotion prospects, and job security were lower in countries where there was no perceived option of an established collective bargaining process.
- 15) Health and safety conditions got worse for all three groups in all regions between 2000 and 2007
  - The general decline in health and safety conditions for cabin crew was accompanied by a worsening of conditions related to overwork, maternity protection and harassment, among other factors.
  - Among cabin crew, air traffic service workers and ground staff in all regions, half of all representatives reported that between 2000 and 2007 there were significant increases in the number of cases of work-related stress between 2000 and 2007.
  - cabin crew, ground staff and air traffic service workers all reported significant increases in work-related injuries and illnesses, pain, sleep disorders, and absenteeism from 2000 to 2007.
- 16) Between 2000 and 2007, cabin crew had an average of only 6.5 hours of sleep per night during layovers. Chronic sleep deprivation presents implicit negative implications for worker, public and passenger safety, and would imply the potential for increased risks of accidents.
- 17) Between 2000 and 2007, cabin crew spent up to 4 hours traveling one way from airport to hotel, or hotel to airport - time that was meant to be their relaxation and rest time between flights. Travel time to and from airports greatly reduced the number of hours cabin crew had for rest and sleep between flights.
- 18) Salaries, promotion prospects, and job security were lower in countries where there was no established collective bargaining process.
- 19) Various legislative changes were made between 2000 and 2007 that facilitated the overall downward progression of conditions of work for civil aviation workers.

As bad as conditions became in the civil aviation industry between 2000 and 2007, they would undoubtedly be even worse without the on-going concerted efforts of the ITF and its global affiliates. In response to the shocks triggered by 11th September 2001, which have affected civil aviation workers in the most adverse ways, the ITF has worked to diminish and create buffers to these impacts. As of 2009, the end of the decline in conditions appears nowhere in sight. The findings from this study should be used to emphasise the need for close and active union collaboration, strong organising efforts, solidarity and campaigning at local, national, international and regulatory levels.

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The study reveals that among ITF's global affiliates, ground staff, air traffic service workers, and cabin crew have shown remarkable courage, demonstrating extraordinary commitment to their jobs and co-workers, even when faced with unacceptable, potentially dangerous, continually declining and highly stressful conditions across the industry. Between 2000 and 2007, civil aviation workers in all regions were confronted with increasingly difficult conditions of work, largely triggered by the events of 11th September. It is highly significant that during this period, ground staff, air traffic service workers and cabin crew – in all regions – maintained a sense of solidarity, showed personal interest in their co-workers, were friendly to each other, and showed respect for their co-workers.

## SECTION II: OVERVIEW

### Part I: Stress and Fatigue Among Civil Aviation Workers

At its 2006 international Civil Aviation Congress, delegates identified stress and fatigue as the common priority issue among the ITF's three main aviation sector industrial groups:

- Air traffic service workers
- Cabin crew
- Ground staff

Delegates from all regions expressed a strong sense that a serious increase in stress and fatigue had occurred since 2000, affecting members from all three occupational groups. They suspected that this increase was largely triggered by the events and aftermath of 11th September 2001. The ITF was asked to try to identify the main factors contributing to what appeared to be a pandemic of increased stress and fatigue, and to create policy action based on the information obtained.

Examination of the emotional stress, extreme fatigue and resultant social and economic insecurities among civil aviation workers, largely previously unstudied, is timely in an industry undergoing major change and characterised by worsening conditions of work. Focusing on civil aviation workers is more important since the events of 9/11, with world attention looking at ways to prevent disruptive and potentially dangerous passengers from getting onto airplanes. Media attention today indicates that there is widespread public concern about the quality of work performed by airport security workers and cabin crew. Airport ground staff, air traffic service workers and cabin crew make up the backbone of air transport, yet the working conditions of these three occupational groups have been previously little examined. An examination of the conditions in which they work is a first step to bringing them into focus as worker groups with larger and more important roles to play in public safety in the aviation industry.

Because the effects of work stress and fatigue can be serious and detrimental to the health, well-being, and functionality of a working person, a global study was designed to examine among civil aviation workers the factors known to contribute to work-induced stress, chronic strain, and fatigue.

Stress is often regarded as an individual problem; however there are characteristics of work, 'job stressors' that can cause a stress reaction in most workers.<sup>1</sup> Work stressors can be seen as impediments in the work place that are due to inadequate work organisation, leadership or technical and environmental design, and imbalances between the amount of effort put into work compared to the rewards received. Research has identified concrete work stressors that may cause stress reactions, fatigue and burnout. These include high work demands, lack of opportunities to control important conditions of the job, lack of support from co-workers and supervisors within the work place<sup>2</sup>, an imbalance between effort put into the job and the rewards received in return<sup>3</sup>, and emotional labour<sup>4</sup> in dealing with the public, clients, passengers, co-workers, supervisors and management. Uniquely for a worker health and safety study, changes

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1 P Schnall, M Dobson, E Roskam, (Eds), *Unhealthy Work: Causes, consequences, and cures*, Baywood, New York, 2009.

2 Karasek, R and Theorell, T (1990). *Healthy Work, Stress, Productivity and the Reconstruction of Working Life*, USA: Basic Books.

3 Siegrist J (1996) Adverse health effects of high-effort/low-reward conditions. *J Occup Health Psychol* 1:27-41

4 Hochschild, A R (1983/ 2003) *The Managed Heart; commercialisation of human feeling*, University of California Press: Berkeley

in civil aviation workers' social and economic security were examined as well. Weakened laws and regulations, increased employment, income and labour market *insecurity*, declines in industrial relations including diminished opportunities for collective bargaining, worsened health and safety conditions, are all factors that can contribute to chronic stress and fatigue among civil aviation workers.<sup>5,6,7,8</sup> Together, all of these factors can influence the stress response. Appropriate job demands and job control, along with co-worker and supervisor support of the worker are viewed as critical in preventing and reducing stress and burnout. Time scheduling of jobs can be another source of stress, from inadequate shift systems, long and odd working hours, and lack of rest breaks. Job stress results when the requirements of the job do not match the capabilities, needs and resources available to the worker.<sup>9</sup> Common responses to prolonged exposure to work stress are fatigue and burnout.

International studies have demonstrated that workers who are exposed to chronic work stress have an increased risk of developing chronic diseases, in particular cardio-vascular disease, heart attack, hypertension, diabetes, stroke and depression, compared to workers without chronic work stress.<sup>10,11,12</sup> Moreover, among these people, sickness absence, health-damaging behaviours (eg smoking, alcohol) and psychosomatic complaints (eg sleep disturbances, musculoskeletal complaints) are more frequent.<sup>13,14</sup> Encouragingly however, this same body of evidence demonstrates that social support (from supervisors or co-workers) can protect workers against the damaging effects of chronic stress, and reduce workers' risk of developing those same chronic diseases.

Civil aviation is a particular industry where the safety and lives of many thousands of people depend on workers in these occupational groups. Work-induced stress and fatigue can cause personal coping difficulties and may have adverse effects on both the individual worker's health and on job performance.

There are many ways of defining and measuring work stress. For this study the most commonly used methods were used. Firstly, stress reactions such as burnout and fatigue were investigated. Secondly, work characteristics ("stressors") including job strain, effort-reward imbalance and emotional labour that may lead to stress reactions were addressed. Thirdly, key issues of social and economic security were examined. These terms will be explained in the following sections.

- 5 P Annycke, F Bonnet, A Khan, J Figueiredo, E Roskam, G Standing, L Zsoldos, Economic security for a better world, International Labour Office, Geneva, 2004.
- 6 C Afford (E Roskam and A Leather, Eds), Corrosive Reform: Failing health systems in Eastern Europe, International Labour Office, Geneva, 2003.
- 7 E. Roskam, Drewczynski, A, Bertolini, R, The Insecurities of Service: Airport check-in workers, Socio-Economic Security Papers No. 40, Socio-Economic Security Programme, International Labour Office, Geneva, 2003.
- 8 M Keith, J Brophy, P Kirby, E Roskam, Barefoot Research: A Workers' manual for organising on work security, International Labour Office, Geneva, 2002.
- 9 Cox, T, Griffiths, A and Rial-Gonzalez, E, Research on Work-Related Stress, Luxembourg: Office for Official Publications of the European Communities, 2000.
- 10 Kivimäki, M, Virtanen, M, Elovainio, M, Kouvonen, A, Väänänen, A & Vahtera, J 2006a, 'Work stress in the etiology of coronary heart disease – a meta-analysis.' Scandinavian Journal of Work, Environment and Health, vol 32, pp 431-442.
- 11 Siegrist J Chronic psychosocial stress at work and risk of depression: evidence from prospective studies. Eur Arch Psychiatry Clin Neurosci. 2008; 258 Suppl 5: I 15-9.
- 12 The Job Stress Network alone lists some 133 published scientific journal articles, books and book chapters which investigated and concluded similar findings. See: Job Stress Network: <http://www.workhealth.org/references/refland.html>.
- 13 Tsutsumi A, Kawakami N (2004) A review of empirical studies on the model of effort-reward imbalance at work: reducing occupational stress by implementing a new theory. Soc Sci Med 59:2335–2359
- 14 Rugulies R, Norborg M, Sørensen TS, Knudsen LE, Burr H. Effort-reward imbalance at work and risk of sleep disturbances. Cross-sectional and prospective results from the Danish Work Environment Cohort Study. J Psychosom Res. 2009 Jan; 66(1):75-83.

## A. FATIGUE AND BURNOUT – WHAT IS IT?

Fatigue is a specific response of our central nervous system (mental fatigue) and our muscular system (physical fatigue) to work effort. It may affect and impact on the quality of one's life<sup>15</sup>, contribute to psychological overload<sup>16</sup>, and contribute to impaired quality of work.<sup>17</sup> When adverse consequences of fatigue are experienced in the work environment, such as decrease in ability to focus attention, increased risks of errors, and over-sensitivity, the issue becomes one of an occupational hazard.<sup>18</sup>

Burnout, or feelings of being used up, have been described as a condition resulting from working under stressful conditions. Burnout can manifest itself as feelings of emotional exhaustion (fatigue), depersonalization or cynicism (a sense of internal quitting from work) and reduced personal accomplishment or professional efficacy (professional worth).<sup>19</sup> Emotional exhaustion is characterised by a lack of energy and the feeling that one's emotional resources are used up. This fatigue can manifest itself in physical characteristics such as waking up as tired as when going to bed or lacking the energy to face the tasks of the day. Depersonalization or cynicism (internal quitting from work) relate to how the worker has developed negative feelings about work and personal accomplishment. It manifests as detachment from work and "emotional callousness" towards work tasks. Reduced personal accomplishment and professional efficacy (professional worth/value) relate to feelings of decline in one's feelings of competence and professional achievement. They manifest as personal doubts about the ability to achieve, to perform, and to have positive interactions at work.

## B. JOB STRAIN – WHAT IS IT?

Unhealthy work characteristics associated with job strain include high work demands, low control (meaning not being in charge of one's own work and a lack of participation in decision-making), and low social support by co-workers and supervisors. For example, a job is highly demanding if the workload is consistently high and requires working at a continuously high pace. The effects of high demands are commonly aggravated under conditions of low control. If one is not in charge of the work, cannot decide how to do the work, and the job does not allow the application of valuable skills, then high work demands turn into a treadmill rather than a stimulating challenge. The support and respect of co-workers and supervisors may help deal with such stressful work conditions. If support is lacking, people may find themselves in a highly stressful job situation with no way out, which can lead to serious chronic health problems.

## C. EFFORT-REWARD IMBALANCE – WHAT IS IT?

Work stress is also caused by effort-reward imbalance. In all societies there is a basic principle of fairness in exchange: if you invest your efforts in favour of another person or party, you expect an appropriate return from their part. This also holds true for the work place. An imbalance between effort and reward leads to stress at work among employees whose efforts at work are high and whose rewards obtained in turn are experienced as inappropriately low.<sup>20</sup> Rewards are defined by three components: salary or wage, job promotion opportunities including job security, and non-material rewards in terms of esteem or appreciation given by superiors, managers etc. Work stress according to this definition has been investigated widely and has been found to be a consistent predictor of adverse health outcomes.

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15 Hjollund, NH, Andersen, JH and Bech, P (2007). Assessment of fatigue in chronic disease: A bibliographic study of fatigue measurement scales, Health and Quality of Life Outcomes 5: <http://www.hqlo.com/content/5/1/12>.

16 Sluiter, JK, de Croon, EM, Meijman, TF and Frings-Dresen, M.H.W. (2003). Need for recovery from work-related fatigue and its role in the development and prediction of subjective health complaints, Occupational Environmental Medicine 60 (Suppl 1): i62-i70.

17 Van Dijk, FJH and Swaen, GMH (2003). Fatigue at work, Occupational Environmental Medicine 60: 1-2.

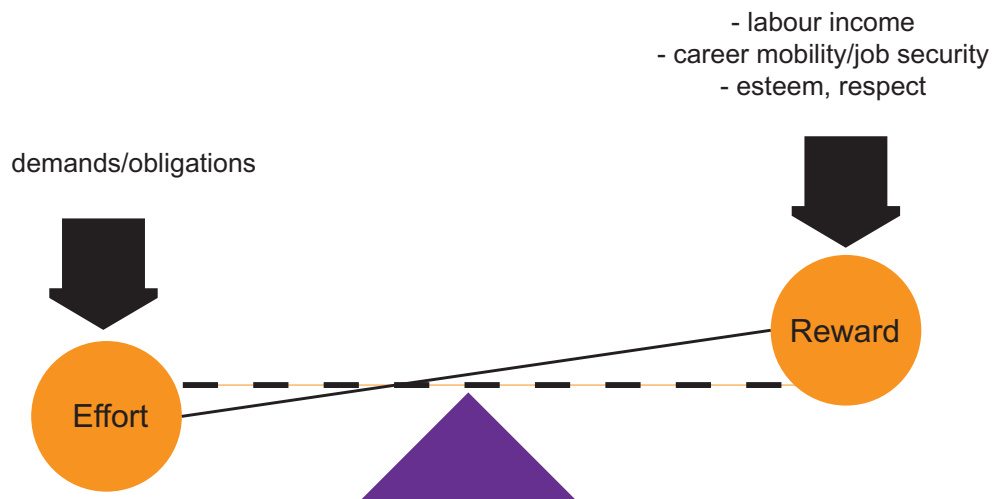
18 International Labour Office (ILO) Tripartite Steering Committee, January 2002.

19 Maslach C, Jackson, SE and Leiter, MP, Maslach burnout inventory manual, Consulting Psychologists Press, Palo Alto, 1996.

20 Siegrist J, Starke D, Chandola T, Godin I, Marmot M, Niedhammer I, Peter R (2004) The measurement of effort-reward imbalance at work: European comparisons. Soc Sci Med 58:1483-499

**Figure 1. Graphical demonstration of the effort-reward imbalance model**

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The groups most vulnerable to this imbalance are those who have no alternative choice in the labour market due to their low qualification. Thus, they are often confronted with high workload and low wages. Work stress also occurs often among those who work in jobs with heavy competition. But even apart from these, work stress is frequent – up to 30% – in a variety of occupations and professions, such as aviation workers. In many business sectors and many countries, economic globalisation currently reinforces these trends.<sup>21</sup>

Although the effort-reward imbalance model was not previously applied to civil aviation workers, several comparable occupational groups in the service sector were shown to suffer rather extensively from this type of work stress.<sup>22</sup> Therefore, it is well justified to apply this model to the entire sample of civil aviation workers and to study the associations of work stress with measures of well-being. Based on findings, policy implications can be addressed to improve the workers' well-being by organisational/structural measures.

#### **D. EMOTIONAL LABOUR – WHAT IS IT?**

There is growing global awareness of emotional labour among those who do this work, their workplace representatives, their managers and among public regulators. The accomplishment of improved conditions in service industries is equivalent to the accomplishment of improved conditions for manual labourers attained through factories legislation and public health legislation. The ITF lends its strength to this end.

*Emotion Work* is the effort required to control oneself in order to produce the outward appearance which affects the feelings of others. *Emotional Labour* is *Emotion Work* done in return for wage payment. Cabin crew or ground staff, for example, who comfort a child who is frightened of flying or lost in the terminal building, are performing *emotional labour*, because now comfort is offered within a labour contract, under management direction.

$$\text{Emotion Work} + \text{Wages} = \text{Emotional Labour}$$

21 Siegrist J. Effort–reward imbalance and health in a globalized economy. *Scandinavian Journal of Work, Environment and Health*, Supplements 2008;(6):163-167

22 Kompier AM, Van der Berg B, Aust and J. Siegrist, Stress prevention in bus drivers: evaluation of 13 natural experiments, *Journal of Occupational Health Psychology* 5 (2000) (1), pp. 11–31.



Each aircraft is cleared for take-off because crew have ensured that passengers are seated correctly, using their powers of persuasion, for example, to get an anxious parent to release their child at the last minute and rest it on the seat next to them as required by safety regulations. Check-in workers affected those passengers by contributing to their sense that 'everything is as it should be'. Cabin crew perform face-to-face emotional labour in dealing with the many different types of people on board. Call-centre ground staff workers are emotional labourers engaging with the public by phone. In each situation, emotional labourers have to make rapid and accurate judgements about the people with whom they are dealing and about how to meet their needs. If a passenger becomes irate, skilful emotional labour may avoid the need for physical restraint, a route diversion, costly delays and expensive trial processes.

Emotional labour contributes to the demands made on emotional labourers. It has been estimated that *half* of all US female employment and around a *quarter* of US male employment involves emotional labour 'in the line of duty'.<sup>23</sup> Emotional labour makes a *vast* and generally underestimated contribution to economy and society. When done well emotional labour often goes unnoticed and under-recorded. It is when it is done badly that emotional labour makes front page news. This carries a clear policy implication: *all ITF affiliates should be aware of emotional labour and of the skilful contribution that it makes both to safety and profitability*. This should strengthen unions' bargaining positions, but also challenge the assumptions of those who are pursuing a policy of incremental automation, and service-reduction, such as what has occurred between 2000 and 2007.

The experience and display of feelings is governed by 'feeling rules' and 'display rules', including for civil aviation workers. For example, anxious cabin crew should not reveal their unease to passengers and crew. Cabin crew and check-in workers should be courteous and moderately cheery, but not *too cheery*. However, feeling one thing while feigning something else is recognised as a type of job stress.

'Collective emotional labour' is also important: the extent to which co-workers 'keep each others' spirits up' in back-stage areas, which, in turn, enables each of them to work effectively with passengers, even when the conditions are challenging. Cabin crew and many ground staff undertake a great deal of emotional labour in order to maintain a calm atmosphere. This is essential to flight safety. Emotional labour can have a high commercial value, especially when it comes to persuading passengers to book again with the same company.

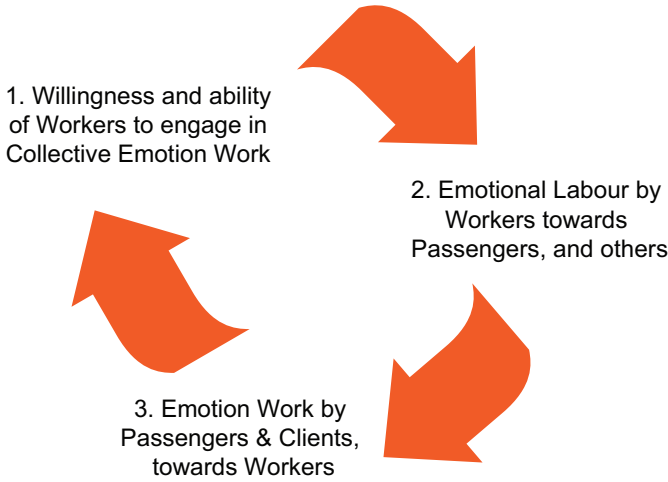
Air traffic service workers undertake the emotional labour required in order to maintain a low key and calm relationship with flight deck crews while they are issuing alterations to headings and altitudes. The range of emotional labour demanded of them is however less than for workers who work face-to-face or voice-to-voice with passengers.

Good 'collective emotional labour' *among workers* can help to sustain individual worker's efforts *with passengers* while mutual indifference or tension among workers, or pressure from supervisors might spoil their ability to interact well with passengers. This system can be pictured as a positive or negative 'loop'. Good and bad experiences with passengers have a good chance of affecting workers' experiences with each other.

23 Op cit Hochschild (1983/ 2003)

Figure 2. Emotion Work Dynamics

Emotions can be passed from person to person (and back again) and carry over from work to home. A bad experience at one point can develop into a bad experience at another point later on. Some organisations have even been described as 'toxic'; however good experience can also be contagious.



EMOTION REGIME

The *emotion regime* is the prevailing mood under which emotional labour is offered and received. The emotion regime after 11th September 2001 was very different to the emotion regime of the day before. The emotion regime on board an aircraft in which the crew are working with the constant worry of losing their jobs may make it difficult for them to perform emotional labour effectively. The emotion regime created by cutting staffing levels without lowering passenger expectations, or by increasing the workload on air traffic services is potentially harmful to both employees and passengers.

Poorly trained emotional labourers or those who are 'pulled in many directions at once' may struggle to concentrate on doing good work with angry passengers or frightened children. Passengers who have been mis-sold a level of service that the organisation cannot sustain are being 'set up' to become a nuisance. When distracted crew and dissatisfied passengers are in the same aircraft after a very rapid turnaround time, with cabin crew expected to serve too many passenger 'segments', then a systemic failure in marketing is compounded by a systematic failure in crewing.

Like mental and manual labour, emotional labour makes demands on workers, calls for special skills (often underrated and under-paid in the case of emotional labourers) and requires sustainable, safe and healthy working conditions and adequate rest. Recipients, such as air passengers, have a direct stake in the well-being of the emotional labourers themselves, whose job it is to ensure their safety. The well-being of passengers and the well-being of emotional labourers are inter-dependent. This carries a major implication: passengers, emotional labourers and, for that matter, air transport employers and regulators, all share a clear public interest in good conditions governed by minimum standards that are backed by strong sanctions for non-compliance. Emotional labour has to be a major element of public policy and it should be made even more prominent than it is.

## Part 2: ITF Industrial Overview

Global civil aviation was on a roller coaster between 2000 and 2007. The millennium began on a high note for aviation but very soon the impact of 9/11 and its attacks using aircraft on the Twin Towers and the Pentagon had huge repercussions throughout the global industry. Many workers in the industry suffered job loss, furloughs, or cuts in pay and pensions as companies went into bankruptcy or other forms of decline. After the 11th of September, over 350,000 jobs were lost in the industry, and only some 150,000 jobs have been regained since 2001. Airlines used 9/11 as an excuse to increase working hours, to decrease wages, to provide shorter employment contracts – to create a general (and progressive) decline in conditions for workers across the industry.

During the initial period post 11th September, when travel reduced phenomenally, airlines tried 'quick fixes' such as increasing lay-offs and unpaid leave, and cutting costs. 'Quick fix' approaches were used rather than opting to address some of the more underlying causes of poor financial performance and many airlines' vulnerability to external market shocks. Policy measures introduced by aviation companies to reduce numbers of workers, contain costs and enhance the organisation's responsiveness to the market have been included in four broad areas of flexibility:<sup>24</sup>

- **Numerical** – changes to the total workforce (eg recruitment freeze, early retirement, redundancy, furloughs, or the non-renewal of temporary contracts).
- **Temporal** – changes to working time (eg short-time working and part-time work)
- **Functional** – changes to job boundaries or skills (eg training or re-training activities, job enlargement or job enrichment programmes)
- **Financial** – changes to remuneration (eg pay cuts, wage freeze, forgoing bonus or holiday payments, or employee share-ownership plans to link pay more closely to corporate performance)

After that initial post-September 11th period however, the airlines turned to "slash and burn" tactics, and conditions continued to decline up to 2007. "Several US civil aviation unions have claimed that management used the events of 11 September to push forward pre-existing restructuring plans, developed during the earlier downturn of 2001, often without proper consultation..."<sup>25</sup> Similar criticisms were voiced from other regions as well, such as by Mustafa Yağcı, Secretary General of Hava-İş (the Turkish civil aviation union).<sup>26</sup>

"Well before the events of September 11 corporate executives were working out plans for drastic cost-cutting measures, including the elimination of thousands of jobs. Airline and aerospace executives have now latched onto the tragic events of September 11 to escalate their attack on the labour force."

- Mustafa Yağcı, Secretary General of Hava-İş

<sup>24</sup> Harvey G and Turnbull P, Contesting the crisis: Aviation industrial relations and trade union strategies after 11 September, International Transport Workers' Federation, London, 2002, pp 15, 17

<sup>25</sup> Op. cit. p.19

<sup>26</sup> Op. cit. p.19

Then, just a few years after 11th September, in the period from November 2002 to July 2003, the illness known as SARS (Severe Acute Respiratory) Syndrome reached near-pandemic dimensions and seriously impacted on the industry yet again, especially in the Asia/Pacific region. Lastly, the war in Iraq increased the fear of terrorism and its impact on fuel prices added to the challenge for the industry.

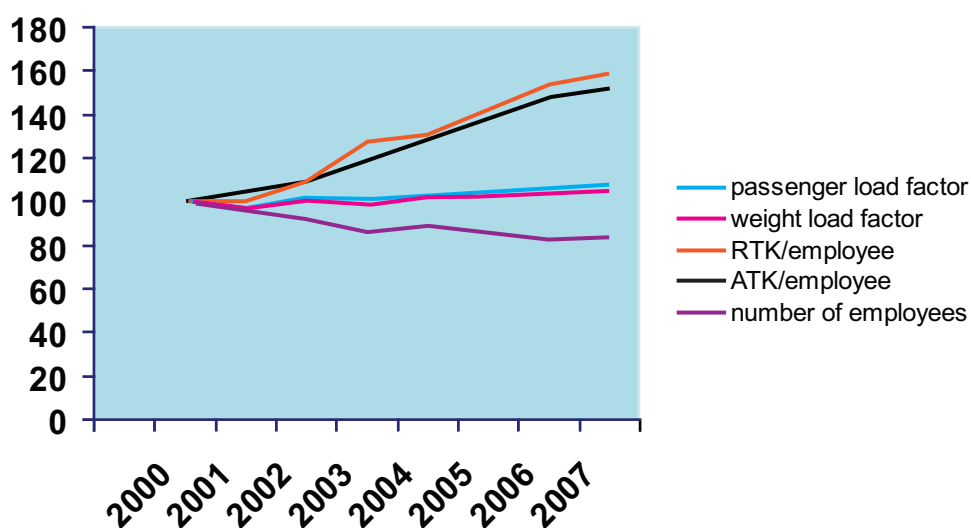
Gradually, from approximately 2003 to 2007, there was a steady recovery in the industry, assisted by the considerable growth in low cost airlines, general restructuring across the industry and a number of mergers and other forms of consolidation that took place. That recovery has since been jeopardised by the oil price hike, which has squeezed profit margins across the industry.

As labour costs are perceived to be a considerable cost factor in aviation there is an inevitable pressure for companies to make savings in this area. Yet at the same time, they need high quality labour to produce a good service in order to remain competitive. Now that oil costs are the largest cost element in an airline's operations there is little opportunity, apart from hedging oil prices, for companies to reduce their fuel bills. Thus, the pressures remain on other cost elements such as labour, which is perceived to be more flexible. Extracting the maximum value from labour has taken a number of forms in companies' search for increased productivity, but the impact for our trade union members has resulted in increased stress and fatigue. Subsequently, this study was conducted as a result of the concerns expressed by our members.

In 2007 global airlines carried a record 2.25 billion passengers on scheduled services, plus an increasing number on non-scheduled and so-called low-cost-no-frills airlines. International passenger travel remained the fastest growing sector with an increase of over 50% since 2000, while domestic travel generally (and with the exception of specific fast-growing markets in emerging economies) grew at a slower pace. Throughout this period of growth, the total available seat kilometres increased more slowly than demand, which in 2007 led to a record load factor of 76.6% on international routes and 76.3% on domestic routes. This is an increase from a 71.2% load factor in 2000. In the same period the freight load factor also increased from 62.2 to 65.4%.

### EMPLOYMENT AND PRODUCTIVITY

During the period under investigation, from 2000 to 2007, employment in the industry decreased by 16%. The combination of an increase in production and a decrease in personnel levels lead to an increase in productivity, specifically of 58.6% RTK/employee (revenue tonne kilometres) from 225 in 2000 to 357 in 2007, and 51.5% ATK/employee (available tonne kilometres) from 361 in 2000 to 547 in 2007.



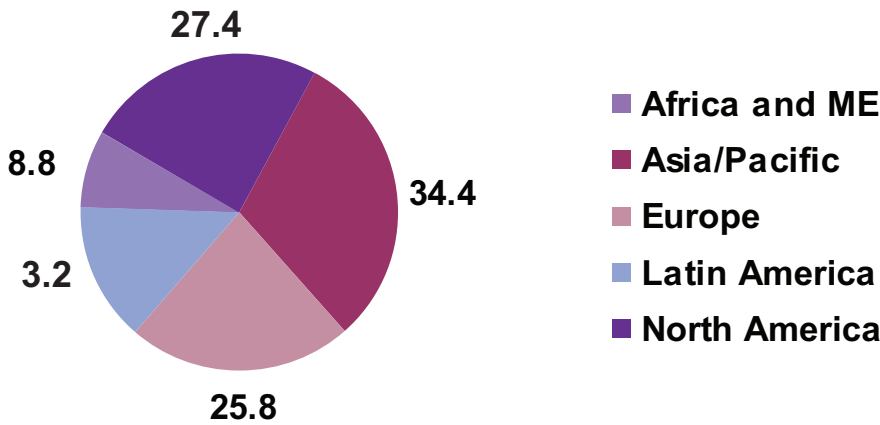
Source: IATA WATS 2007  
 RTK = revenue tonne kilometres  
 ATK = available tonne kilometres

## REGIONAL TRAFFIC

While the above figures describe a global trend, it is important for the relevance of this study to also briefly investigate regional markets. The graph below shows the ranking of these.

Traditionally, Europe and North American markets dominate world aviation. Although this continues to be the case, with a market share of 25.8% and 27.4% respectively (a total of over 50%), at the same time it must be noted that both these markets are generally considered rather mature and saturated, while the Asia/Pacific region is the strongest region on its own. The fastest growth can be observed in Latin America and the Middle Eastern sub-region, with 14% and 16% respectively.

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Source: IATA WATS 2007

## REPRESENTATIVENESS OF THE STUDY, INDUSTRIAL IMPORTANCE OF FINDINGS

The International Transport Workers' Federation is a global trade union federation, with member trade unions throughout all transport industries, divided into separate industrial sectors. Its currently 656 affiliated unions come from 148 countries around the world, and 237 unions in 116 countries among them work together in the ITF's Civil Aviation Section. The ITF is involved in the tripartite structures of the International Labour Organization (ILO), based in Geneva, and in the system of the International Civil Aviation Organization (ICAO), based in Montreal. It continuously contributes to the work of both UN organisations.

In general, the member organisations affiliated to the ITF's Civil Aviation Section nationally cover more than fifty % of their home-countries' aviation workforce. The ITF can thus be considered representative of the vast majority of the 3.5 million aviation employees in direct and indirect employment in the industry worldwide. This includes cabin crews; the numerous employee groups on the ground, including check-in staff, administrative staff, maintenance, mechanics, catering, cleaners, ramp workers, baggage handlers, security workers, and ticket and call centre workers; as well as air traffic management staff. The only exception is the group of flight deck crews, such as pilots, co-pilots, and others, as the ITF only affiliates a minority of these. The majority of this group is affiliated in the International Federation of Air Line Pilots' Associations (IFALPA), with which the ITF has an amicable relationship, as it does with the International Federation of Air Traffic Controllers' Associations (IFATCA), which has also participated in this study.

The surveys used in this study were distributed throughout the ITF's affiliated organisations. After a period of regular monitoring of feedback, an overall response rate of 67% was achieved. Closer investigation of this figure unveils a regional differentiation, which deserves a closer

assessment. The response rate from Europe, for example, was much higher than the total response rate and reached 75%, exceeded only by the 95% response rate from North America. These are remarkable results, as the combination of these two markets is representative of over 60% of total global aviation.

But even figures from other regions that are below 70% are hugely representative, considering the countries from which they originate.

In Asia/Pacific, the study was successful in attracting feedback from all traditional major players, which is significant given this region has outgrown the formerly strongest regions of Europe and North America (see above). Surveys were received from trade unions in Australia, Hong Kong, Japan, Korea and New Zealand, all of which contribute to traffic both towards the West and trans-Pacific. In addition to this, emerging markets such as Malaysia, Indonesia and Thailand, where one of the big regional low cost carriers, Air Asia, has its three home bases, are included, as well as the booming 'tiger economy' of India, home of an exponentially growing aviation industry of both regional and beyond-regional dimension. Trade unions from other countries such as Pakistan and Sri Lanka also contributed from this region.

In Latin America and the Caribbean, the study was successful in attracting feedback from all of the major players, such as trade unions from Argentina, Brazil, Chile and Mexico. As this is one of the fastest growing regions this input is of great importance to the findings of the study. Trade unions from other countries such as Dominica also contributed from this region.

In Africa and the Middle East the study was successful in attracting input from Egypt, Jordan, Lebanon and Morocco in the North, as well as Yemen. The East African Union is represented through contributions from trade unions in Kenya and Uganda as well as Ethiopia. Trade unions from Zimbabwe and South Africa cover the Southern African sub-region. Francophone Africa is represented through a contribution from trade unions from Benin. Although this region is the smallest in terms of global traffic, major players of the region have contributed to the survey's success.

### Part 3: How the Study was Conducted (Methodology)

This study was conducted using Participatory Action Research methodology. Every aspect was developed and carried out jointly between the ITF and the researchers. This methodology enabled the team (12 people, working in six different countries, including four members from the ITF's Civil Aviation Section) to develop collective knowledge of the causes and impact of emotional stress and fatigue on aviation workers. The information obtained through this study provided ITF's affiliates with an empirical basis for developing the policy recommendations that are included in this report. These are the actions needed to address the general trends and problems identified from the study.

Three questionnaires were developed – one for ground staff, one for cabin crew, and one for air traffic services – with input from global affiliates, the Civil Aviation Section, the ITF's advisors, members of the Civil Aviation Section's Health and Safety Working Group, and the researchers. The study examined changes that occurred in the industry between 2000 (de-regulation and post -11th September) and 2007. The ITF translated each questionnaire from the original English versions into eight different languages: Russian, Japanese, Arabic, French, Spanish, German, Swedish, and Italian. They sent the surveys to union representatives of all ITF global affiliates in 116 countries, in all regions of the globe: Africa, Asia/Pacific, Middle East, North America, Latin/South America, and Europe. The ITF represents 800,000 civil aviation workers worldwide. An unprecedented response rate of 67% was achieved, with 105 questionnaires received from affiliates in 54 countries throughout these regions. The research process included literature reviews, secondary analysis of studies previously undertaken on stress and fatigue in civil aviation workers,<sup>27</sup> and researcher participation at numerous ITF Civil Aviation Occupational Health and Safety Working Group meetings.

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**Figure 3.** 105 respondents from 54 countries (A list of all countries that returned complete questionnaires is provided at the end of this report in Annexe I.)



<sup>27</sup> A secondary analysis was carried on the findings of the following two studies: (1) Flight Attendant Fatigue integrated by the Civil Aerospace Medical Institute, Federal Aviation Administration, prepared by the Fatigue Countermeasures Group, Human Factors Research and Technology Division, NASA Ames Research Center, California, 2007; (2) Beyond the midnight oil: An inquiry into managing fatigue in transport, Report to the Australian House of Representatives, Standing Committee on Communication, Transport and the Arts, 2000, Canberra, Australia.



As discussed in *Part 2 (ITF Industrial Overview)* of this Section, all countries representing the largest share of ITF members in each region responded to the questionnaires, including those representing all 'major players' in their respective markets. This made the study significantly representative of ITF global aviation workers. Two notes of caution are warranted when interpreting the findings. Firstly, results were obtained from three out of five countries in the Middle East, a 'newly emerging' region represented by relatively few unions, to date. The sample size for the Middle East was relatively small, but the results from the three respondent countries account for 64% of all civil aviation workers represented by ITF affiliates in the region. Thus, results for the Middle East are highly representative for that region, but do not carry the same weight and significance when compared with other regions. Secondly, results for Latin/South America represent cabin crew and ground staff only.<sup>28</sup> It should also be noted that a significant finding means the reported difference or association could not be due to chance and was therefore found to be a strong result.

### **WHO ANSWERED THE SURVEY?**

The questionnaires were completed by the affiliates, with union representatives responding on behalf of all of their members. The empirical results presented in this report are based on the assessments obtained from union affiliates in all regions, not based on responses obtained from the 800,000 individual members of ITF's affiliates around the world. The findings from this study, based on the views of affiliates, show certain directions of change that occurred between 2000 and 2007, not the magnitude or precise degree of those changes. Those who completed the questionnaires know the industry first hand and are familiar with the problems facing their members. The overwhelming majority of those who answered the survey had been or still were civil aviation workers themselves: 82% of those answering on behalf of cabin crew, 81% answering for ground staff, and 91% of those responding for air traffic services. While many questions involved representatives answering on behalf of their individual members, issues concerning the filing of worker's complaints to the union would also tend to come directly through them in the form of case loads. Collecting data 'one step removed' from the individual workers is valid research. Workers' testimony has always been part of the inspection of industrial systems and many have been asked to provide evidence to committees by answering on behalf of others, having intimate knowledge of the circumstances being inquired about.

By being both union representatives and civil aviation workers, the union affiliates were the people best placed and most knowledgeable to develop the policy recommendations and priorities that are included in this report. Their recommendations are grounded in experience but also by collective exposure to many other experiences through their work with the ITF. Their policy recommendations are based on the conclusions that union representatives have drawn from the empirical results of this investigation, and the intimate knowledge they have of their own situations. It is on this same basis that politicians' views carry weight and force of leadership.

<sup>28</sup> The results present careful observations about the general direction and magnitude of changes that occurred between 2000 and 2007. Making precise inter-regional comparisons as well as general conclusions about entire regions has been avoided where samples were rather small.



## WHY NOT SURVEY ALL ITF CIVIL AVIATION MEMBERS INDIVIDUALLY?

- The ITF represents 800,000 civil aviation workers globally. To collect data from all individual members would require:
  - a very large amount of funding (eg \$1 million)
  - trained enumerators to reach every member individually, since it would be very difficult, and in many cases impossible, for union representatives to be able to survey all members individually

Sample size: 105 responses is considered a small sample in a research context, however in this study the 105 responses received represent hundreds of thousands of workers.

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A global study is a large and challenging undertaking. It requires networks and 'points of entry' to obtain information from many sources in many countries. Few organisations have access to points of entry on a global scale. Most global studies usually collect information either from governments or from households. The cost of such studies is very high, thus they are usually limited to large organisations such as the World Bank or international organisations. Conducting a global study through and with an international trade union and its global affiliates is a unique approach in research.

## KEY FACTORS THAT MADE THIS STUDY A SUCCESS

- The study was mandated by affiliates (member trade unions) from all regions who were highly motivated to participate and to ensure success so they could make use of the findings.
- The ITF Civil Aviation Section is highly responsive to its affiliates.
- Many of the issues addressed were raised at numerous ITF Civil Aviation Health and Safety, and Industrial Working Group meetings and conferences over many years, hence members' voices were heard in many different fora.
- ITF translating each questionnaire into nine languages (Russian, Japanese, Arabic, French, Spanish, German, Swedish, Italian, English). facilitated affiliate responses
- The questionnaires did not ask for a lot of statistical data, which can be difficult for many affiliates to provide.
- The ITF Civil Aviation Section, affiliates, and members of the Health and Safety Working Group worked together with the researchers in defining key issues, questionnaire design and wording of questions, interpretation of results, and preparation of the report.
- The ITF followed up with affiliates for months to ensure responses were received.
- The dedication of the researchers – all strongly committed to workers' health, and who value working with trade unions.

To the best of our knowledge this is the first joint international trade union/researcher study to obtain such a good response rate. The high response rate from affiliates in all regions provided sufficient results to be able to discuss trends in the different regions.

#### **Part 4: Targets for the Results of This Study**

The primary target audience for the results and policy recommendations from this study is all ITF affiliates around the world and their collective bargaining agents. This global study addressed the problems of stress and fatigue as global issues, not as issues confined to one particular country, or to a group of countries, since airlines operate in international markets. It is hoped that findings and recommendations from this study will lead to local, national and global level policy changes through the ITF's successful work with IATA, ICAO, individual airlines, airport management authorities, the ILO, and the ITF's international affiliates. Some solutions, such as international minimum standards, require pressure at the relevant international level.

The key targets for action are:

- Safety regulators, who for some groups of employees in aviation regulate maximum duty times
- Governments, who need to be pressed to close legal loopholes and make sure that their law enforcement and judicial agencies are able to continuously monitor the application of such limitations, and to respond effectively in case of breaches of these limits
- Airlines, handling agents and airport companies, as well as air traffic service providers who need good practices and procedures
- The public, since ultimately airline passengers are potential victims of fatigue-related incidents, including those related to security.

The value of such a project can be seen from the work achieved through the ITF's global campaign against Air Rage, on-going since 2000. This campaign has achieved changes on the regulatory level, and through ICAO material which was issued to member states covering the issue of Air Rage.

Improvements in working conditions in various airports around the world have also been achieved by the ITF's global work in disseminating the findings and policy recommendations from pioneering research carried out with the ITF in an international occupational health study of airport check-in workers.<sup>29,30,31</sup> The study provided the first empirical evidence and policy recommendations related to airport check-in workers which collective bargaining agents have been able to use in negotiations with management to improve not only working conditions and worker health, but also employment contracts, wages and benefits.

The findings and recommendations from this study on stress and fatigue are envisioned to contribute to developing ITF civil aviation strategic campaigns and policy, and to inform both affiliates and management in their consultation and areas of joint work.

It is hoped that the aims of envisioned campaigns will include:

- defining preventative policies aimed at minimising the risks of fatigue
- developing strategies and training for the relevant employees for managing and preventing fatigue
- identifying sanctions against offenders
- developing post-incident support for staff who have suffered fatigue-related trauma
- raising public awareness of this problem and winning the support of passengers and the wider public.

<sup>29</sup> Rosskam, E, *Excess Baggage: Leveling the load and changing the workplace*, Baywood, New York, 2007.

<sup>30</sup> Rosskam, E, Dreuczynski, Bertolini, R, *Service on the ground: Occupational health of airport check-in workers*, International Transport Workers' Federation/International Labour Office, 2005.

<sup>31</sup> Rosskam, E, *Working at the check-in: Consequences for worker health and management practices*, University of Lausanne, Switzerland, 2003.

## SECTION III: THE BIG PICTURE – FINDINGS FOR THE WHOLE SAMPLE

This global study examined the various factors known today to contribute to work-induced stress and fatigue, and looked at these specifically in relation to civil aviation workers around the world. The factors that were examined included job effort, burnout, high job load, degree to which the worker can be in charge of his/her job, social support, time issues, effort/reward imbalance, emotional labour and social and economic security. These are all described in Section I of this report.

This Section presents the findings for the whole sample from the study – including Cabin Crew, Ground Staff, and Air Traffic Services. Having a sense of what happened to each individual group is important; Sections III, IV, and V present findings for the individual occupational groups. Having a sense of “the big picture” of what changed between 2000 and 2007, for all 3 groups, in all regions, and the trends that emerged overall is equally important, for making comparisons between the different groups and regions.

### Part I: Stress, Fatigue and Burnout

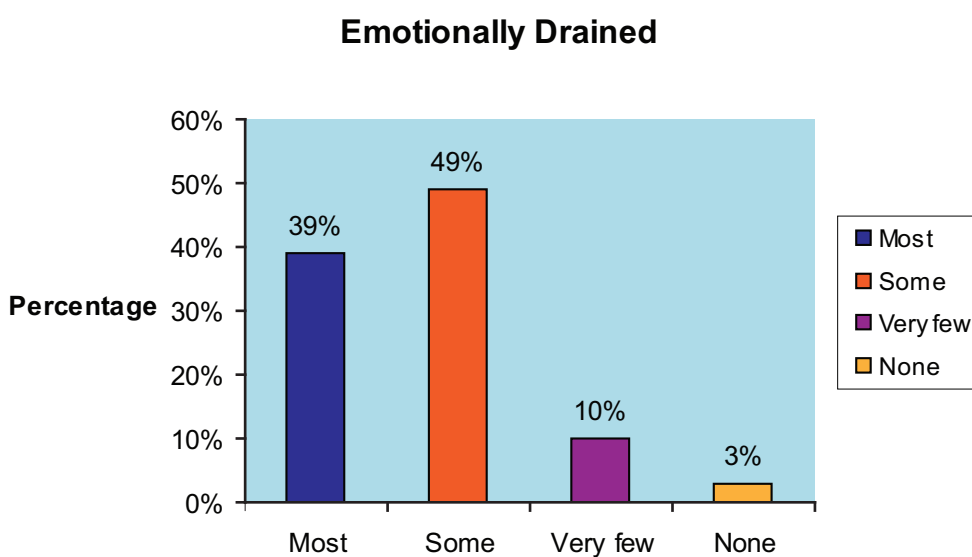
#### FATIGUE AND BURNOUT IN AVIATION WORKERS

What is the level of fatigue and burnout reported by the union affiliates for all aviation workers? We first looked at the responses to a selection of individual questions such as feeling emotionally drained, feeling tired in the morning, feeling burned out and used up. Representatives had to indicate for a set of questions that measured emotional exhaustion whether ‘most’, ‘some’, ‘very few’ or ‘none’ of the workers they represent were exhausted.

#### AVIATION WORKERS EMOTIONALLY DRAINED

The results of the investigation revealed that many representatives of aviation workers felt that the workers they represented were emotionally drained from their work. 39% of the representatives reported that *most* of those they represent felt emotionally drained from their work. Half reported that *some* of those they represent felt emotionally drained from their work.

Figure 1: Feel emotionally drained from their work



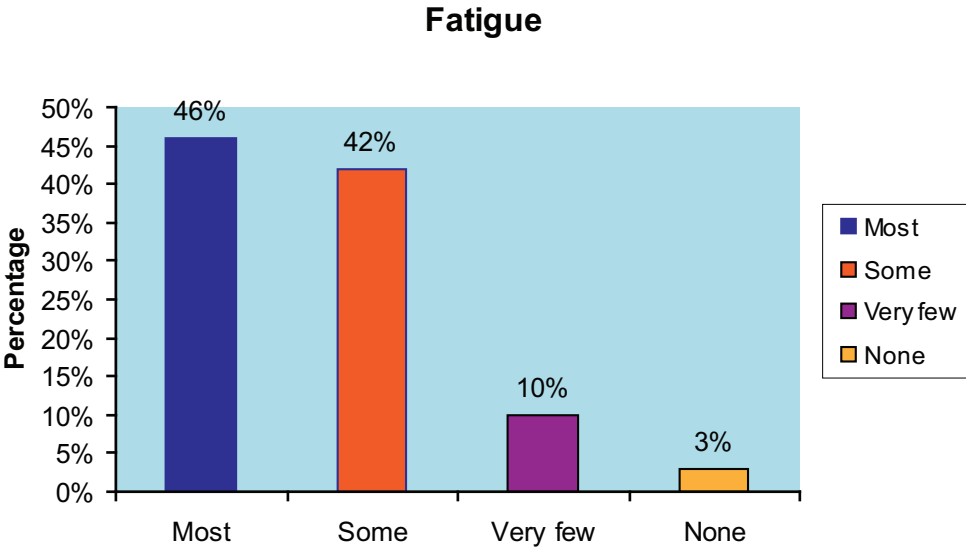
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AVIATION WORKERS TIRED IN THE MORNING

Feeling fatigued when getting up in the morning can be a sign of serious chronic fatigue. An alarming half (46%) of representatives felt that this was an issue with most of the aviation workers they represent.

Figure 2: Feel fatigued when they get up in the morning and have to face another day on the job

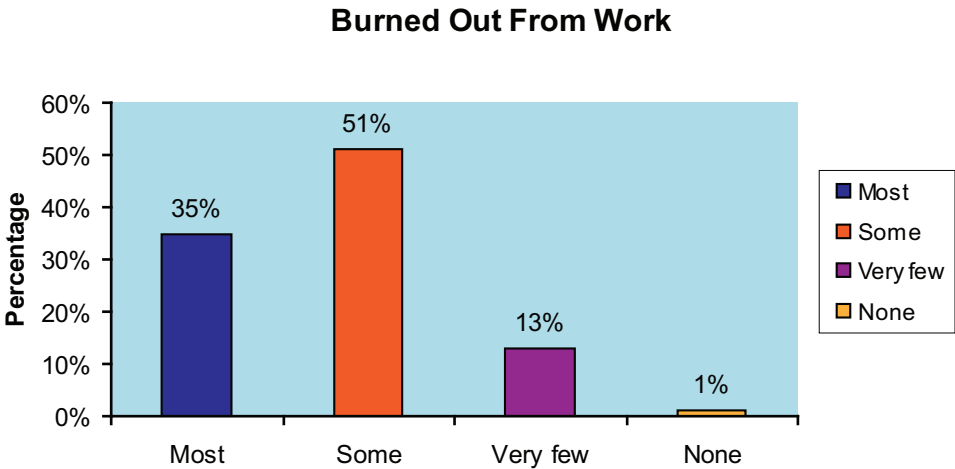
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AVIATION WORKERS BURNED OUT

On looking at the issue of burnout and the aviation worker, slightly more than one third of the representatives for the occupational groups reported most workers feeling burned out from their work. 42% of the representatives felt that some workers were burned out from their work.

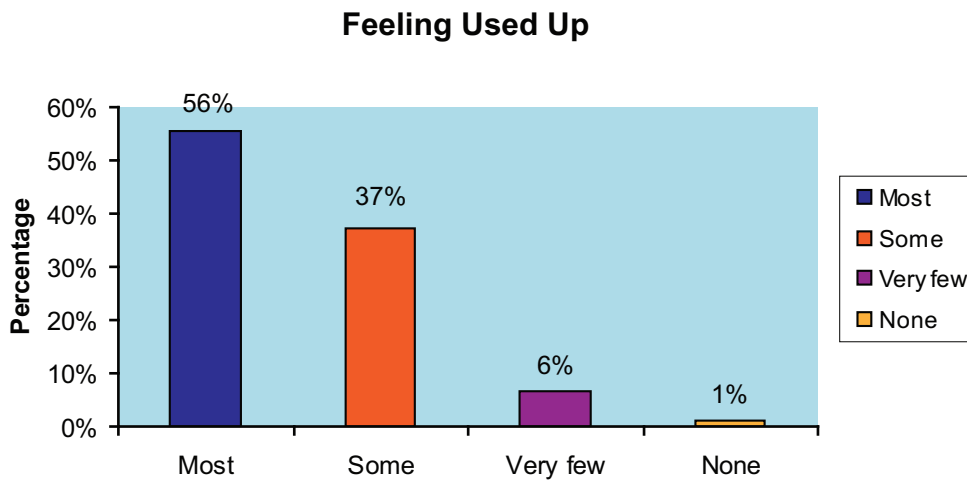
Figure 3: Feel burned out from work



## AVIATION WORKERS USED UP

More than half of the respondents reported that most of their members felt used up at the end of the workday. Nearly 40% said that some of the workers they represent felt used up at the end of the workday.

**Figure 4: Feel used up at the end of the workday**

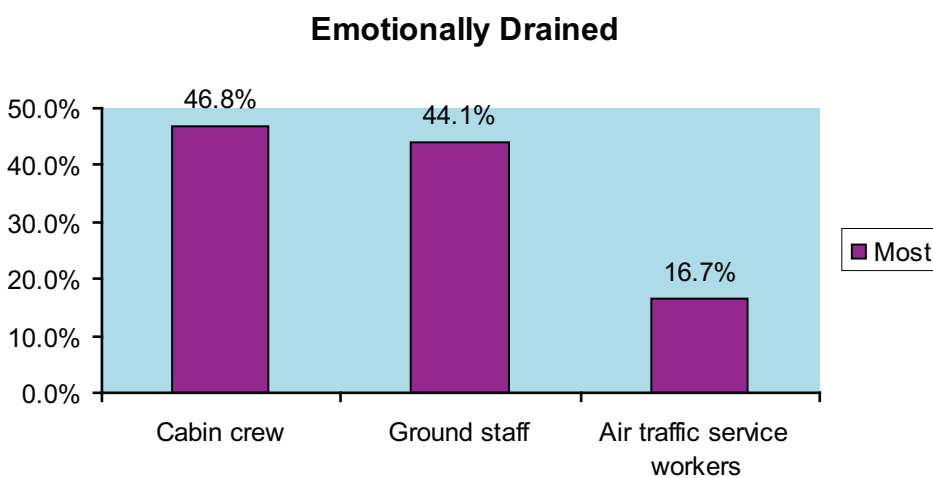


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## BURNOUT IN THE DIFFERENT GROUPS OF AVIATION WORKERS

Did feelings of emotional fatigue differ between the different groups in aviation work? The reports for emotional fatigue were highest amongst cabin crew. Half (47%) of cabin crew affiliates reported that most of their members felt emotionally drained. Ground staff did not fare much better than cabin crew in terms of those reporting members feeling emotionally drained.

**Figure 5: Feel emotionally drained by occupational group**

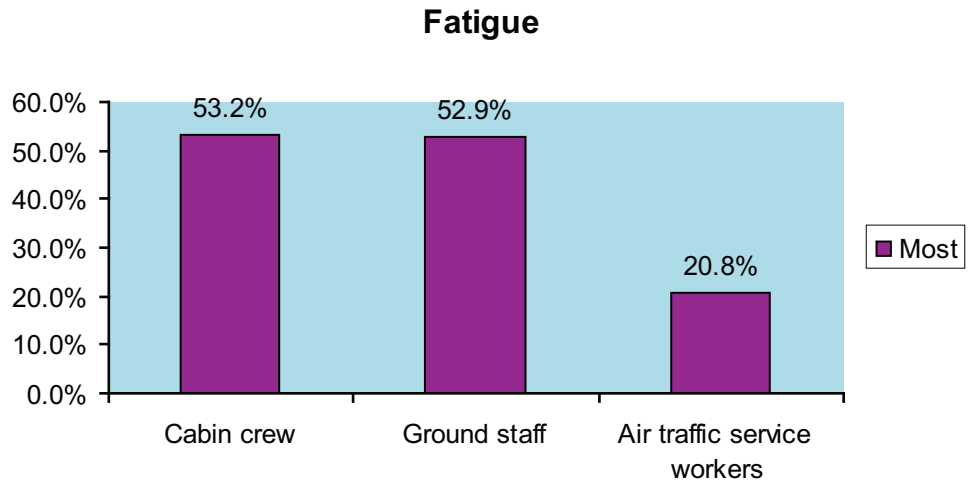


### FEELING TIRED IN THE MORNING BY OCCUPATIONAL GROUP

Cabin crew and ground staff representatives scored highest in this question, a very negative outcome indeed. For each group, over half (53%) reported that most of the workers felt tired in the morning. The percentages reported are quite worrying in view of the safety-sensitive duties cabin crew and ground staff have to perform. Starting each workday already feeling tired is an indicator of the impact of chronic stress. These findings should be understood in the context of cumulative effects and the damage to health that can result. Of no less importance, starting each workday already tired increases the risks of accidents, and again, the implications for public safety here would appear to be obvious.

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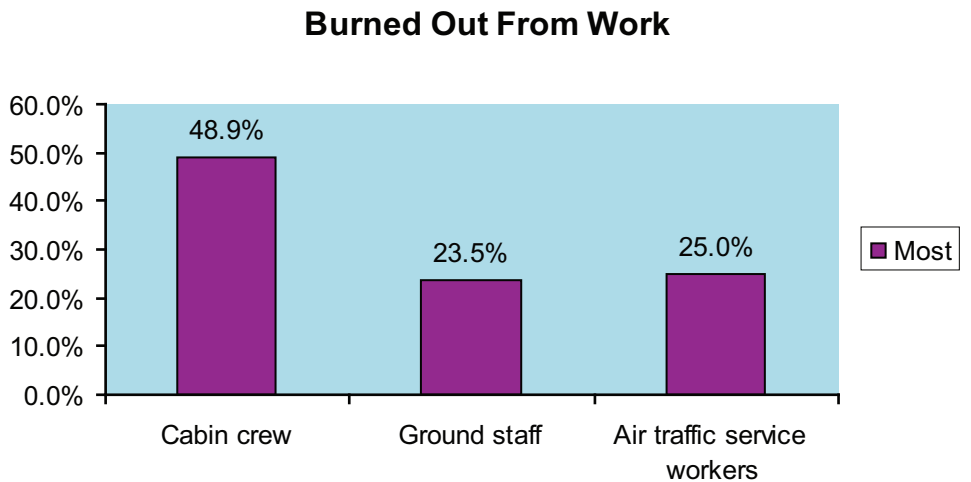
Figure 6: Feel tired in the morning by occupational group



### BURNED OUT FROM WORK BY OCCUPATIONAL GROUP

The percentages of representatives that reported that most workers felt burned out from work were quite high throughout the three occupations, with cabin crew and ground staff affiliates reporting this most often.

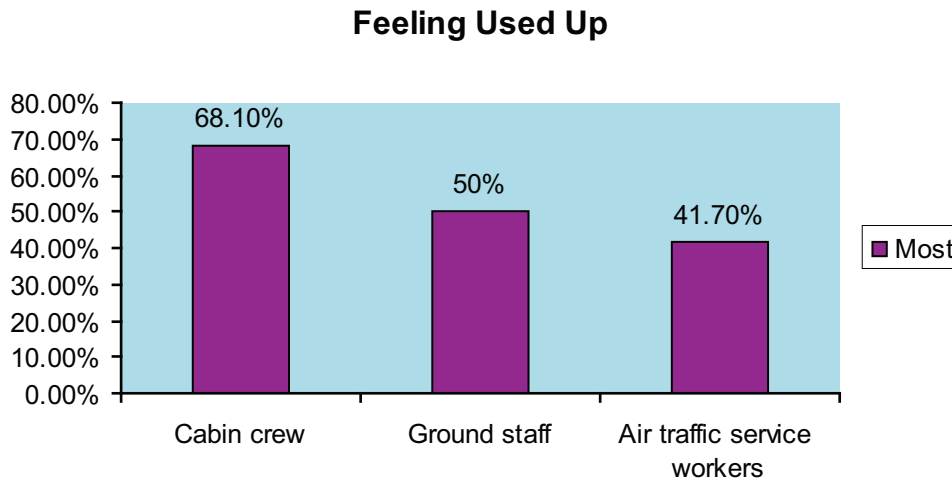
Figure 7: Feel burned out from work by occupational group



## FEEL USED UP BY OCCUPATIONAL GROUP

Similar reports of feeling used up at the end of the workday were reported, with cabin crew and ground staff affiliates showing the highest levels. These levels were very high for all groups in keeping with reported levels of being tired in the morning.

**Figure 8: Feel used up by occupational group**



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## JOB CHARACTERISTICS (WORK DEMANDS, FREEDOM TO DECIDE / JOB CONTROL, SOCIAL SUPPORT, AND TIME ISSUES)

What are the typical work stressors that may cause burnout in aviation workers? The study investigated specifically high work demands, low control over working conditions, lack of supervisory and co-worker-support, and scheduling issues.

## WORK DEMANDS IN ENTIRE SAMPLE OF AVIATION WORKERS

High work demands include a high work pace with high amounts of work and sometimes coupled with conflicting demands

**Figure 9: Work demands: Percentage of those who strongly agreed or agreed with statement**



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Representatives reported high levels of work demands. Nearly all affiliates agreed or strongly agreed that the type of work required working very hard and very fast. Over half (61%) of representatives strongly agreed or agreed with the statement that aviation workers do not have enough time to get the job done. The vast majority (80%) of surveyed affiliates indicated that workers were asked to do an excessive amount of work. And the vast majority (83%) also reported that their members were exposed to conflicting demands made by others.

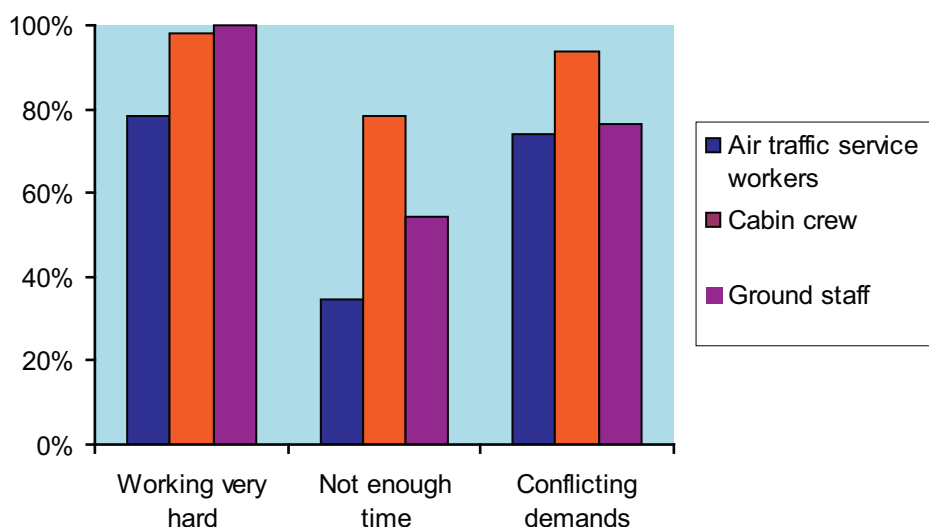
In summary, each of these findings is worrying, and taken together they more than suggest unfavourable work conditions, by those well placed to judge.

### **COMPARING WORK DEMANDS IN DIFFERENT GROUPS**

There were clear differences in the estimated work demands reported by the union affiliates for each occupational group. Working hard was found to be consistently very high (78 -100%) for each of the three occupational groups.



**Figure 10: Example questions for work demands by occupational group: strongly agreed or agreed to statement**



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'The type of work requires working very hard', revealed 100% of ground staff representatives agreeing or strongly agreeing with this, and nearly all (98%) cabin crew representatives also reported this. Air traffic service worker affiliates indicated a significantly lower level. There were also significant differences between the three groups with regards to not having enough time to get the job done. An alarming vast majority (78%) of union affiliates representing cabin crew workers indicated that this group did not have enough time to get the job done, with nearly all (93%) reporting that cabin crew experienced conflicting demands. Ground staff and air traffic Service workers' representatives also reported extremely high levels of conflicting demands (77% and 74% respectively)

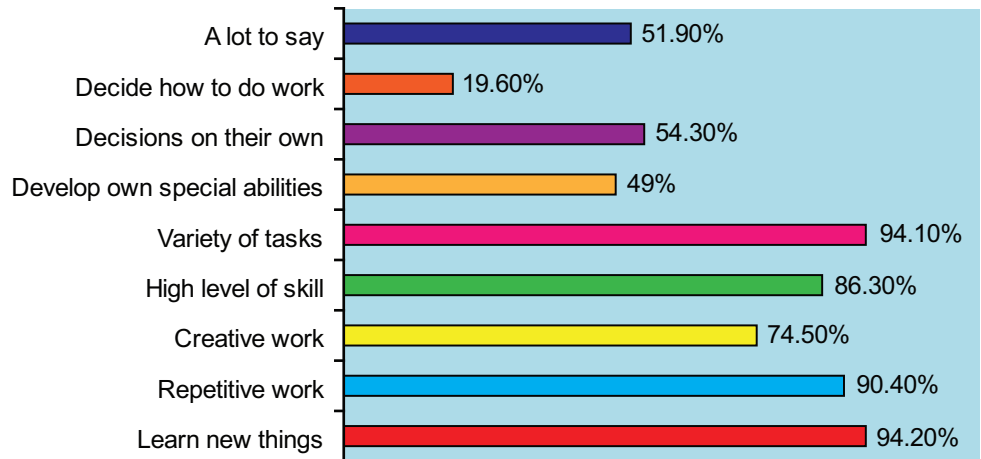
### **CHANGES IN JOB DEMANDS FROM 2000 TO 2007**

Nearly all (90%) respondents agreed or strongly agreed that since 2000, the jobs of the workers they represented had become more and more demanding. This was unanimously true for all three occupational groups. Do the reports of the representatives suggest that the increase in workload since 2000 was associated with their members *not* having enough time to get the job done? The findings revealed that over two thirds of those representatives who strongly agreed that demands increased between 2000 and 2007 *also agreed or strongly agreed* that their members did not have enough time to get the job done..

### **JOB CONTROL IN ENTIRE SAMPLE**

**Figure 11: Job control in aviation work: strongly agreed or agreed to statement**

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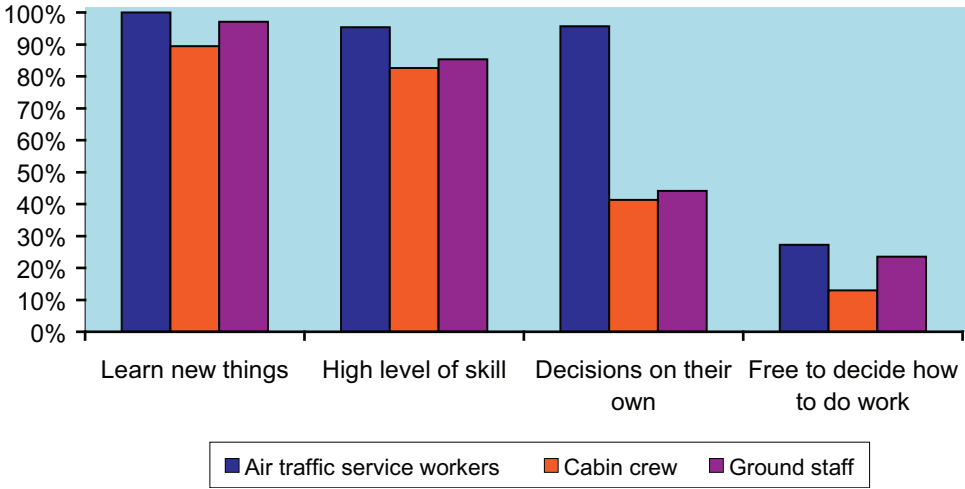


The above figure shows the responses of the representatives in relation to the degree of control aviation workers had over making decisions in their jobs (decision latitude), that is, to what extent were workers able to be in charge of their jobs and to apply and expand their skills. In general the affiliates indicated a high level of control over making decisions. Nearly all (90%) of the representatives either agreed or strongly agreed with the statement ‘Their jobs require that workers learn new things’. Overall, 94% of representatives reported that their members’ type of work included a variety of tasks and 86% indicated that the job required a high level of skill. However, only 20% of union affiliates felt that workers had any control over *how* to do their work. Repetitive work was reported by nearly all (90%) affiliates.

***JOB CONTROL BY OCCUPATIONAL GROUP***

When the same questions were examined by occupational group, the most significant differences between the three groups were found in the questions whether the job allowed learning new things, required a high level of skill, allowed the worker to make decisions on their own, and whether workers were free to decide how to work. Air traffic service representatives reported the highest levels of all the three groups; results for union affiliates for ground staff and cabin crew were close to each other.

**Figure 12: Job Control by occupational group**

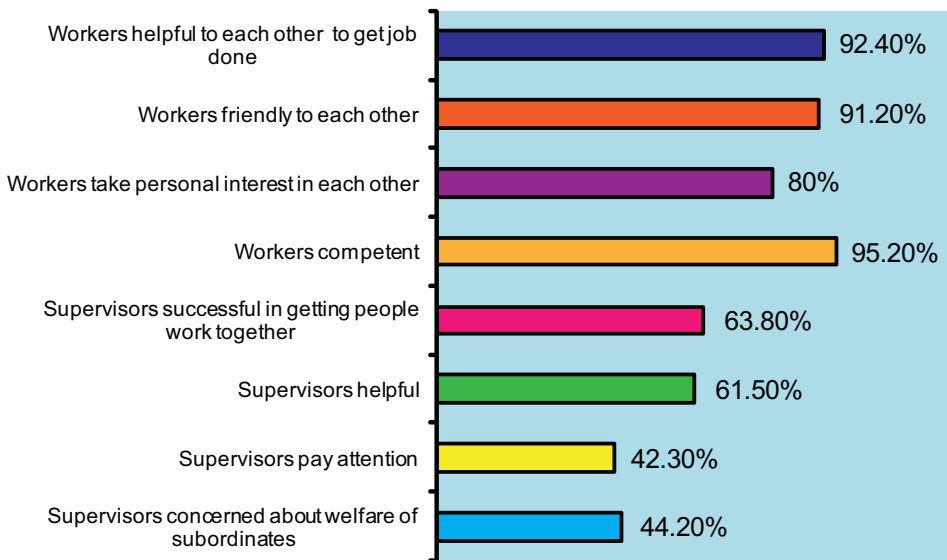


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**SUPPORT BY SUPERVISORS AND CO-WORKERS IN ENTIRE SAMPLE**

Whereas affiliates for all groups taken together scored supervisory support at a moderate level (between 42% and 64% of the representatives agreed or strongly agreed with the statements shown in Figure 13), the answers in relation to co-worker support were notably higher. The vast majority of representatives agreed (and strongly agreed) that between 2000 and 2007 workers were friendly to each other and were helpful to each other to get the job done.

**Figure 13: Support by supervisors and co-workers: Percentage of those who agreed or strongly agreed**



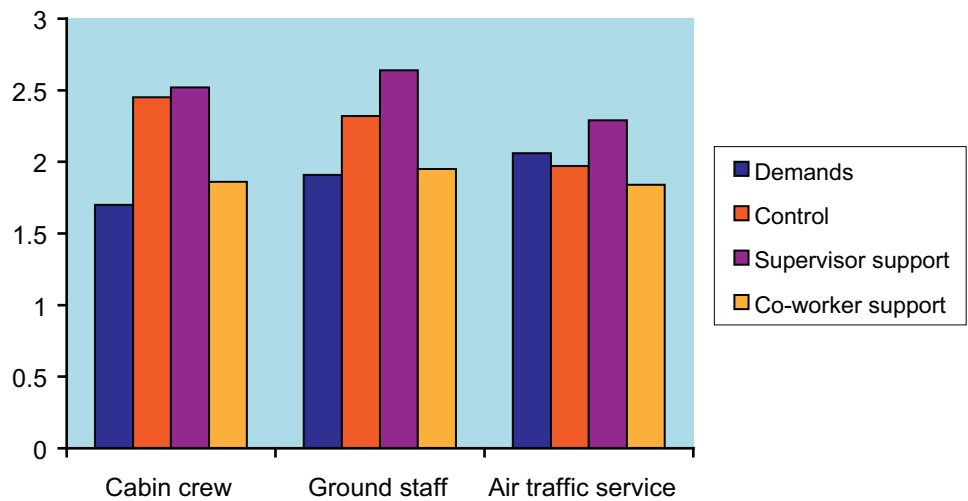
## CO-WORKER AND SUPERVISOR SUPPORT BY OCCUPATIONAL GROUP

With regard to supervisor and co-worker support, the three groups were quite similar. The only marked difference was for the statement 'Supervisors are successful in getting people working together'. Only 18% of those representing ground staff strongly agreed or agreed. The percentages for those representing air traffic service workers and cabin crew were higher, 70% and 72% respectively.

## COMPARISON OF HIGH STRAIN BETWEEN THE THREE GROUPS OF AVIATION WORKERS

Based on affiliates' responses, the so-called 'high strain jobs' – those with a combination of high work demands and low control over one's job – were distributed unevenly between the occupational groups. Air traffic service representatives indicated the highest percentage of high demands (above average) coupled with low job control (below average) when compared to the reports of the representatives of the other two groups. These findings warrant serious attention for air traffic service workers because the combination of high work demands with low control over decision-making is known to result in chronic work stress, potentially increasing the risk of developing chronic disease, in particular hypertension, cardio-vascular disease, stroke, diabetes, and depression. These findings have serious implications for public safety in addition to the health of air traffic service workers. Cabin crew were reported to have the lowest demands combined with the highest control over decision-making in comparison with the other two groups. There were no marked differences in supervisor or co-worker support between the three groups.

Figure 14: Summary values of job characteristics for three occupational groups

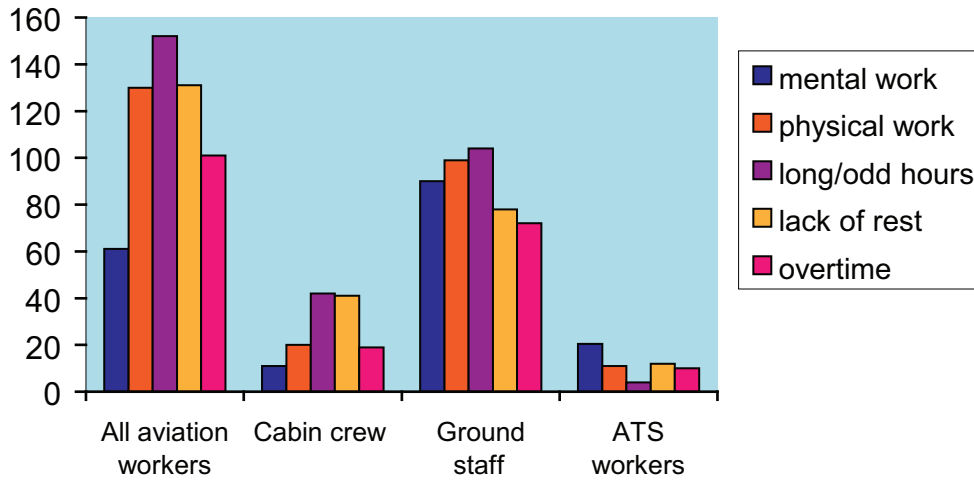


## JOB CHARACTERISTICS, FATIGUE AND BURNOUT IN AVIATION WORKERS: IS THERE A LINK?

### MAIN FATIGUE FACTORS

Union affiliates were asked which factors mainly contributed to fatigue in aviation workers.

**Figure 15: Number of affiliates reporting fatigue factors**



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For the entire group of civil aviation workers, long/odd hours, physical work and lack of rest were mentioned most often by affiliates as the main factors contributing to fatigue. Cabin crew representatives felt that long/odd hours and lack of rest contributed most to fatigue among their members. Physical work, mental work and overtime were mentioned as well, but less often. Those representing ground staff reported long/odd hours and physical work most often as causing fatigue, closely followed by mental work. Representatives of air traffic service workers rated mental work the greatest cause of fatigue.

## PART 2: EFFORT-REWARD IMBALANCE

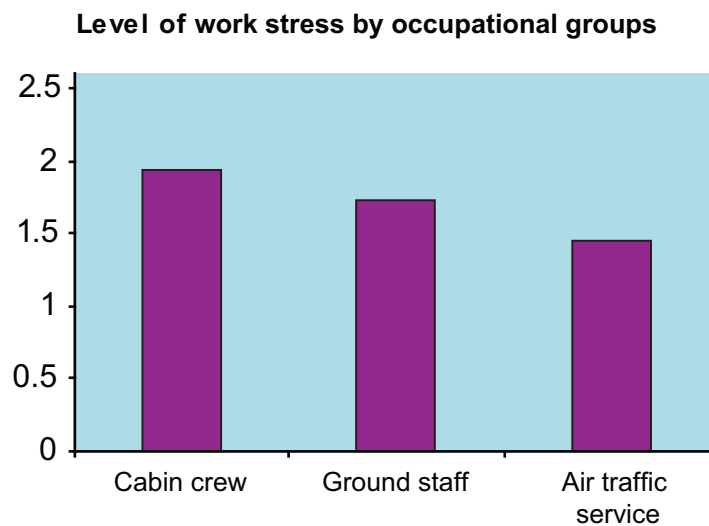
In this next part, the overall findings of work stress caused by an imbalance between the level of effort put into the job compared with the occupational rewards received are presented by region, and by occupational group.

*How was work stress distributed by occupational groups of civil aviation workers as measured by an imbalance between efforts and occupational rewards?*

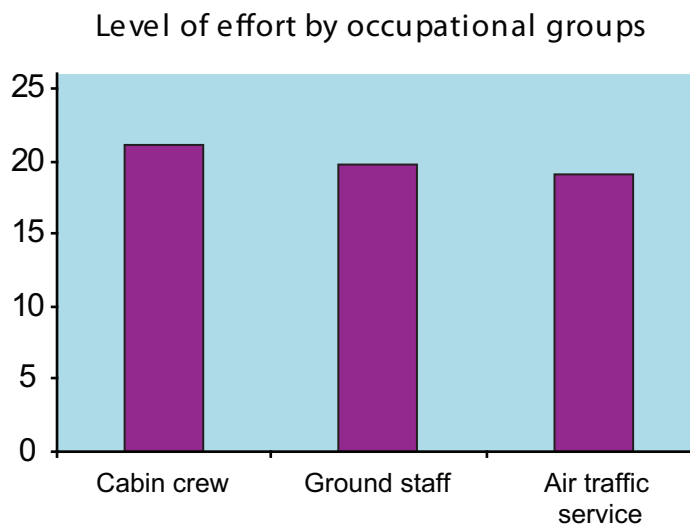
As shown in Figure 16, cabin crew had the highest amount of work stress (effort-reward ratio), followed by ground staff and air traffic service workers.

In Figure 17, differences of effort at work between the three groups are shown. Relatively high effort at work was observed among cabin crew compared to the other two groups. Similarly, lower rewards at work were experienced by cabin crew, compared to the other two groups (Figure 18).

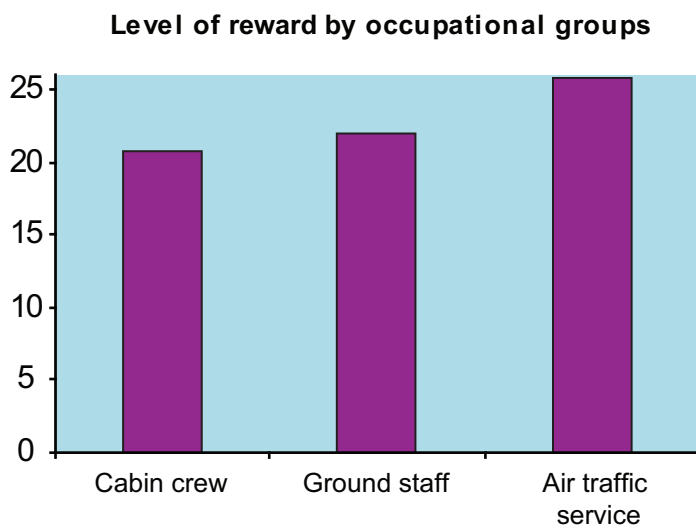
**Figure 16. Level of work stress (mean [average] of the effort-reward ratio) by occupational groups. The higher the bar the higher the stress at work.**



**Figure 17. Level of effort by occupational groups (mean [average] of the effort scale). The higher the bar the higher effort at work.**



**Figure 18. Level of reward by occupational group (mean [average] of the reward scale). The lower the bar the lower reward at work.**



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**Key points:**

Between 2000 and 2007, of the three groups, cabin crew experienced the highest level of work stress as measured by an imbalance between efforts and occupational rewards.

Esteem reward and job promotion prospects were relatively lowest among cabin crew personnel.

Between 2000 and 2007, air traffic service workers had the highest level of job demands together with the lowest amount of control over decision-making. This combination is a well-documented cause of chronic work stress and increases the risk of developing chronic disease, in particular hypertension, cardio-vascular disease, stroke, diabetes, and depression. These findings have serious implications for public safety in addition to worker health.

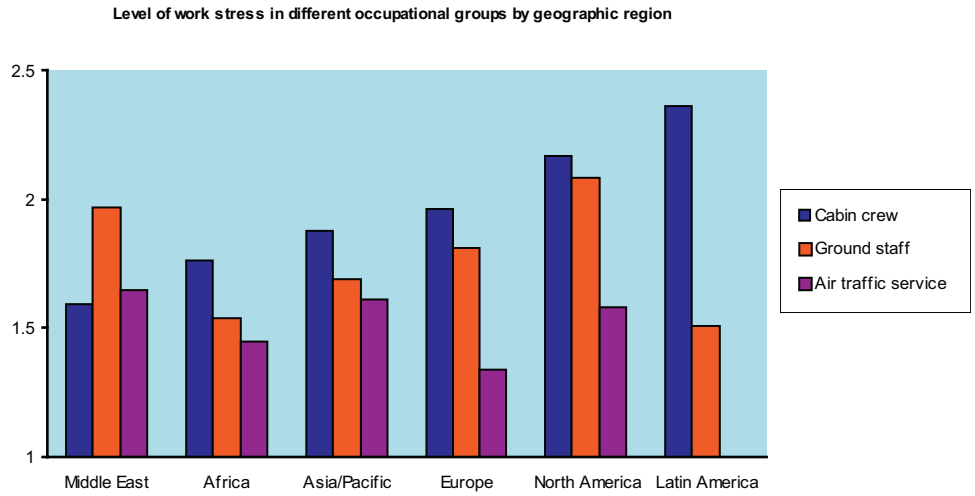
Work-related stress can lead to emotional fatigue. This study found that compared to other occupational groups, civil aviation workers had, at least through the eyes of their representatives, a high degree of work stress in terms of the effort-reward imbalance model, and a similar conclusion was drawn with regard to the level of emotional fatigue.

The findings revealed that in civil aviation workers worldwide, emotional fatigue was positively associated with effort: the higher effort at work, the higher the emotional fatigue. Similarly, the same was true for the overall measure of work stress through the effort-reward ratio. Low reward at work was associated with high emotional fatigue. This was particularly the case for esteem reward, ie receiving adequate respect from supervisors and co-workers. This association was found to be true among all three occupational groups.

Figures 19 to 23 combine the information on work stress between 2000 and 2007 for the three occupational groups, distributed across the various regions. Differences in overall work stress between occupational groups were most pronounced in Latin America, North America and Europe. Among the three occupational groups, as noted above, cabin crew had the highest level of stress caused by a serious imbalance between efforts and rewards (Figure 19). These findings are cause for alarm in terms of public safety and worker health. It should be considered that cabin crew suffering from chronic work stress may not be able to perform at their top level of performance, including that related to passenger safety. These findings are discussed in more detail in Section III of this report and warrant immediate attention.

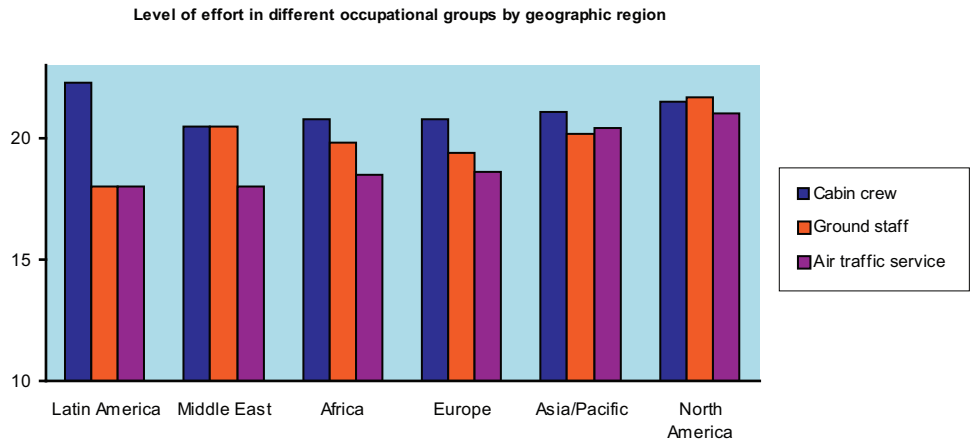
As depicted in Figures 20 and 21, these differences were mainly due to variations in the level of occupational reward. More specifically, job security and sense of esteem appeared to contribute most to the differences in reward, and differences were observed most clearly between Latin America, North America, and Europe, compared with the other regions (Figures 22-23).

**Figure 19. Level of work stress (mean [average] values of the effort-reward ratio) in different occupational groups, by geographic regions. The higher the bar, the higher the level of work stress (range of the effort-reward ratio vary from 0.25 to 4.0).**



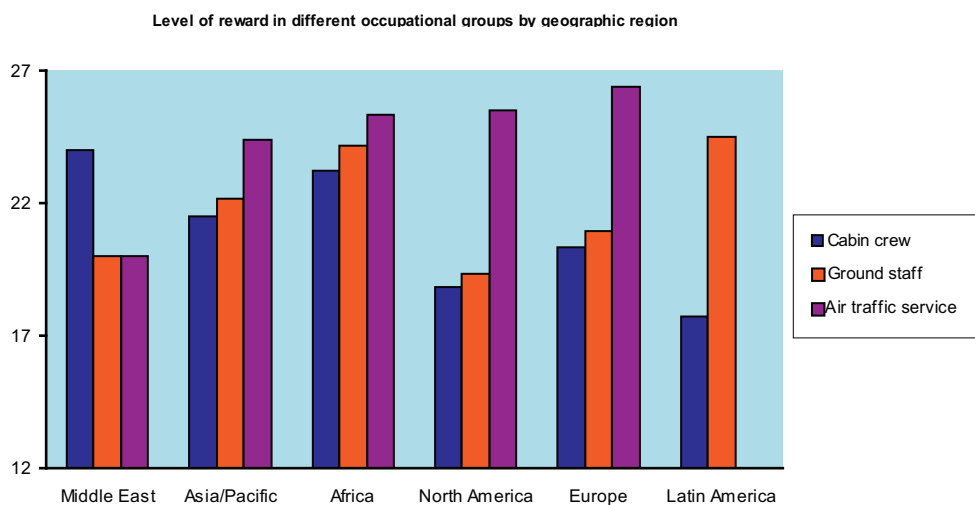
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**Figure 20. Level of effort (mean [average] values of the effort score) in different occupational groups, by geographic regions. The higher bars indicate higher effort. (range of the effort scale varies from 6.0 to 24.0).**



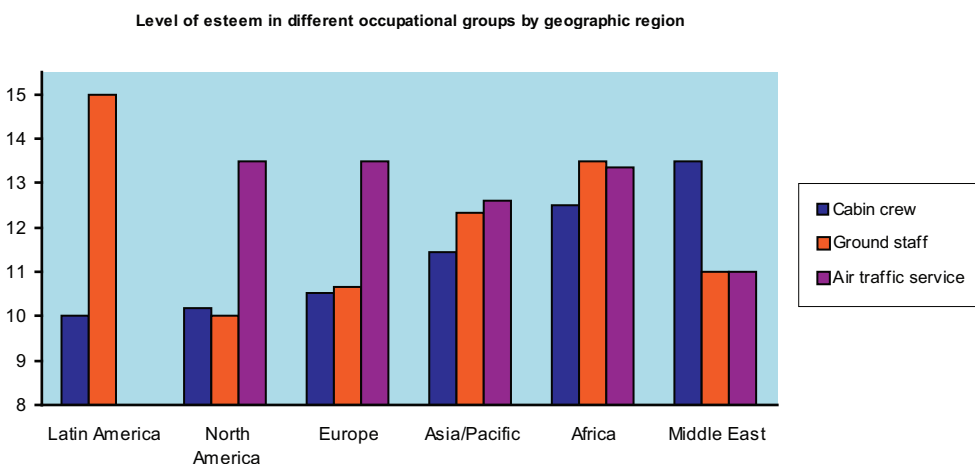


**Figure 21. Level of reward (mean [average] values of the reward scale) in different occupational groups, by geographic regions. The higher bars indicate higher rewards (range of the reward scale varies from 11.0 to 44.0).**



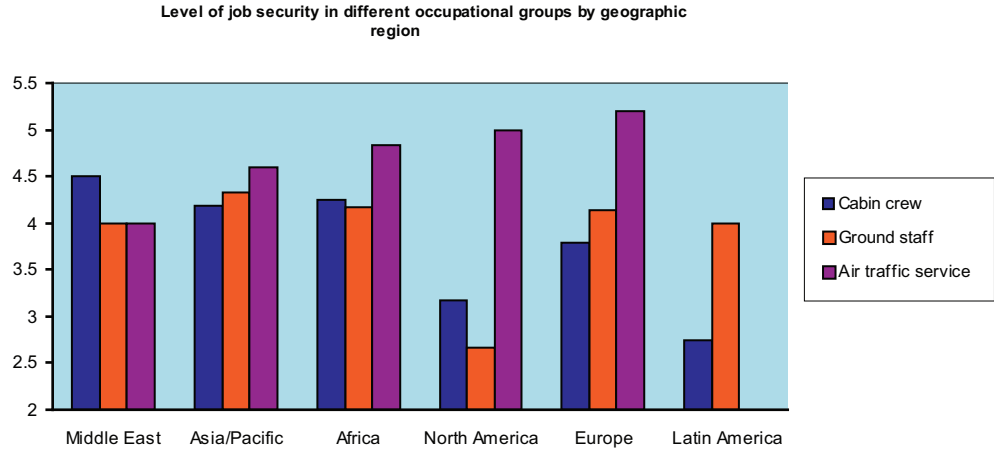
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**Figure 22. Level of esteem reward (mean [average] values of the esteem scale) in different occupational groups, by geographic regions. The higher bars indicate higher esteem reward (range of the esteem reward scale varies from 5.0 to 20.0).**



**Figure 23. Mean (average) values of the job security scale in different occupational groups, by geographic regions. The higher bars indicate higher job security (range of the job security scale varies from 2.0 to 8.0).**

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## WORK STRESS AND EMOTIONAL FATIGUE IN CIVIL AVIATION WORKERS

Work-related stress can lead to emotional fatigue. Overall, this study found that representatives of cabin crew reported a high degree of work stress as measured by an imbalance between efforts put into their job compared with occupational rewards received. Work stress due to this imbalance was highest amongst cabin crew in comparison with the other two occupational groups. Similar conclusions can be drawn with regard to the level of emotional fatigue, which is a direct outcome of work stress. Summarising these findings, emotional fatigue was positively associated with effort: the higher the effort at work, the higher the emotional fatigue. The same holds true for the overall measure of work stress: the lower the reward at work, the higher the emotional fatigue. This was found to be the case in particular for esteem reward, ie receiving adequate respect from supervisors and co-workers, and was seen among all three occupational groups.

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### Part 3: Emotional Labour and Work Stress

The great majority of ITF representatives reported from around the world that 'pressure to complete work tasks' has increased for *all categories* of ground staff and in particular for check-in staff. There were only *three* individuals who reported reduced pressure to complete tasks (these responses were on behalf of security workers).

Where was that pressure coming from? Many respondents reported increases in the number of complaints made to ITF affiliated unions about 'intimidation by management'. This was true for all three occupational groups:

- Among cabin crew, two thirds of respondents reported an increase
- Among ground staff, 56% reported an increase
- In air traffic services half reported an increase

Fewer than one-in-ten reported a decrease between 2000 and 2007 in complaints about management intimidation, across the three sectors.

Nearly three quarters (70%) of all affiliates reported an increase in 'verbal abuse from passengers' and 68% reported an increase in 'inappropriate demands and expectations'; and this at a time when demand for air travel was *falling*. But how about that first stage: relations among workers (see Figure 2, Part I, sub-section C in Section II of this report)?

### STANDING TOGETHER

Here the picture was much more encouraging. 60% of all affiliates felt there had either been 'no change' or a 'decrease in verbal abuse by other workers', while 70% reported either no change or a decrease in 'physical abuse by other workers'.

Indeed relations among workers held up surprisingly well between 2000 and 2007:

- Two-thirds reported that 'workers take a personal interest in each other'
- More than nine-out-of-ten described workers as 'friendly towards each other'
- More than 90% agreed or strongly agreed that workers were 'helpful towards each other in getting the job done'.

Bearing in mind that work rosters usually mean a different crew make-up for almost every flight, what these data suggest is an esprit-de-corps that is common to all workers concerned. What is suggested here is that between 2000 and 2007, most workers were able to count on each other to a considerable degree, even if they did not know the others. This is characteristic of a well-disciplined and effective uniformed service.

These positive indicators were despite strong indications from ITF representatives that workloads were 'constant and heavy', marked by 'interruptions' and that 'jobs had become more demanding since 2000 (all but 10% thought this). Thus, while work pressures were reported as high (defined in many ways) and workers were seen to have a lot of responsibility (only 2% disagreed), workers' treatment of each other seemed to have held up during the time period. This finding is important for passengers as good relations between workers (Stage 1 in the Diagram) surely help to sustain their ability to meet the needs of passengers through emotional labour (at Stage 2 of the Diagram). But if the model is correct, then abuse of workers by passengers and increased intimidation by managers could corrode workers' support for each other. What seems clear is that relationships amongst workers are not the problem, but when they are compromised, then a major component of air-safety could fail.

### *INVISIBLE SKILLS?*

The next group of data need careful interpretation:

- More than nine-out-of-ten ITF affiliates agreed that air transport jobs 'require that workers learn new things'
- Three-quarters thought that air traffic services, ground staff and cabin crew needed to be 'creative'
- 86% recognised air transport work as requiring 'a high level of skill'
- An overwhelming 91% agreed that 'this type of work includes a variety of tasks'.

What scope was there for individual autonomy? Looking across all three groups, about half of workers were acknowledged as 'developing their own special abilities' and making 'a lot of decisions on their own'. But what about emotional labour specifically?

Of the three groups, more emotional labour was needed from cabin crew and 'customer facing' ground staff, such as check-in workers.

### *SUSTAINABILITY?*

The issue of the sustainability of emotional labour can be approached in other ways. For example, over half of the respondents agreed that 'family and friends dislike how often workers are preoccupied with their work while they are at home'. In other words, it appears that notwithstanding the level of personal interest they took in each other and mutual support in getting jobs done, workers may have been carrying difficulties home with them to their friends and family.

Moreover:

- 35% reported burnout in 'most' workers and half reported burnout in 'some' workers (49% and 47% respectively amongst cabin crew)
- Workers were reported as becoming 'less interested in their work'. Nearly one third of affiliates said 'most' workers were 'less interested', while another one third said 'some' had become 'less interested'
- One quarter of those answering reported that 'most' workers had 'become less enthusiastic about their work,' while 45% felt that 'some' had become less enthusiastic about their work.

A massive 87% of affiliates overall reported that 'some' or 'most' workers 'feel emotionally drained [by] work'. Well over half of respondents recorded that 'most workers feel used up at the end of the day' and almost all other respondents indicated that at least 'some' were 'used up'. A mere 6% of respondents indicated that 'very few or none' were 'used up' and a remarkable 90% indicated that 'some or most workers feel frustrated by their job'.

It is worth emphasising the value of 'backstage areas' where air transport workers can relate their 'war stories' about difficult circumstances (triumphs as well as defeats), debrief (and learn) from each other, 'sound off' confidentially and have adequate time to do this. 'Collective emotion work' could contribute to making air transport employment more satisfying and more sustainable at an effective level. It makes good policy-sense to think about the improved experience that passengers might get if workers' opportunities to sustain each other were increased and to consider the cumulative effects this might have on reducing the incidence of disruptive behaviour by passengers and increasing attention to safety duties.

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### *STAFF INTERACTION, SERVICE TO PASSENGERS AND SAFETY*

The cheapening and speed-up of service between 2000 and 2007 was something that aviation workers regretted.<sup>32</sup> What their regret suggests is that workers normally value and enjoy emotional labour (even when changing the mood of 'the other guy' takes a large effort to accomplish) and are discouraged when working conditions prevent it from being done. Could there be a link between the degree to which workers take a personal interest in each other; the time available for emotional labour towards passengers, recognising and reacting to potential security threats and performing safety duties? Perhaps.

It is apparent from the emotional labour aspects of the study that most crew managed to uphold their duty while also supporting each other. It is also apparent that they did so under conditions that had worsened in many reported respects between 2000 and 2007.

### *SEEING THINGS GLOBALLY*

Large percentages of those answering the survey had a low opinion of supervisors. Many saw them as unsympathetic and ineffective, particularly ground staff supervisors.

Overall, changes in reported complaints about 'unmanageable workloads' were significantly associated with reported changes in the number of complaints about:

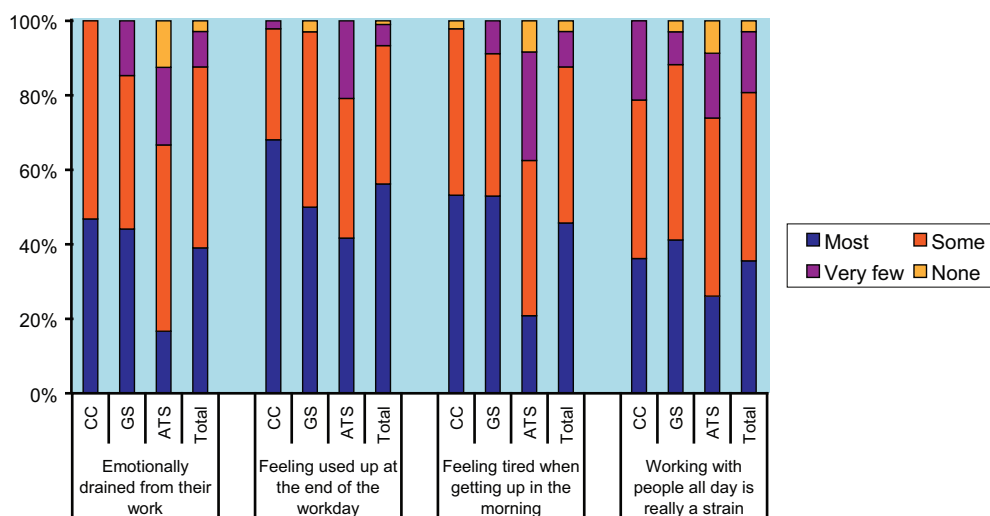
- 'inappropriate working methods'
- 'intimidation by management'
- 'poor morale and well-being'
- 'physical abuse by other workers'
- 'verbal abuse by other workers'.

<sup>32</sup> Op.cit. Hoschild, 2003, pp. 117-131

The ITF's affiliates often hear directly about staff complaints and are well placed to know whether staff complaints have increased. What seems to have become clear from the evidence revealed in this study is a package of bad news, as reported by members to their representatives and relayed to the ITF through the survey.

ITF affiliates are also well placed to estimate the exposure of staff to physical and verbal assaults. As is to be expected, 'change in the number of complaints about verbal abuse by passengers' correlated significantly with change in the number of complaints about physical assaults by passengers between 2000 and 2007. Again as is to be expected, changes in complaints about physical assaults were very much in step with changes in complaints about 'inappropriate demands or expectations of passengers'. Among the respondents, 'inappropriate demands or expectations' were associated with 'verbal assaults' and 'physical assaults'.

**Figure 24. Average Reported Prevalence of Fatigue and Burnout, by Employment Groups, 2007**



Source: SFS, n = 102

Note: CC – cabin crew, GS – ground service, ATS – air traffic services

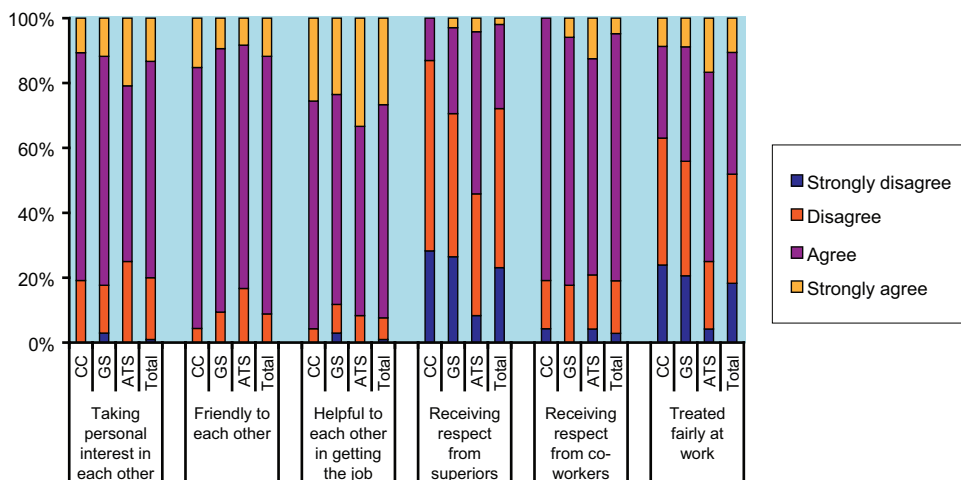
The results shown in Figure 24 are cause for concern. The data are expressed in green, yellow and red, and in this figure it is convenient to use red as suggesting 'danger', yellow as 'caution' and green and light green to indicate 'safe conditions'. What is striking about this figure is that most of the indicators for most occupational groups show red or yellow. For every group of workers and for all four questions about well-being, respondents were of the opinion that most or all the workers they represented directly were:

- emotionally drained from their work
- feeling used up at the end of the day
- feeling tired when getting up in the morning
- experiencing working with people all day as a strain.

It is normal to expect that work will have a tiring effect, and the survey questions were worded carefully to include 'drained', 'used up' and 'strain'. These are *strong words that indicate weariness*. They amount to something more than ordinary 'tiredness', especially when looked at together.

It is reasonable to expect that workers should be tired by work. Work involves effort, after all. But it should be expected that *no* worker is 'drained', 'used up' or 'strained' during the normal course of working, and it should be expected that all workers should be refreshed by sleep. Yet notice how many civil aviation workers were judged to be beyond tiredness between 2000 and 2007.

**Figure 25. Average Reported Prevalence of Favourable and Unfavourable 'Emotion Regimes' and 'Collective Emotional Labour', by Employment Groups, 2007**



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Source: SFS, n = 102

Note: CC – cabin crew, GS – ground service, ATS – air traffic services

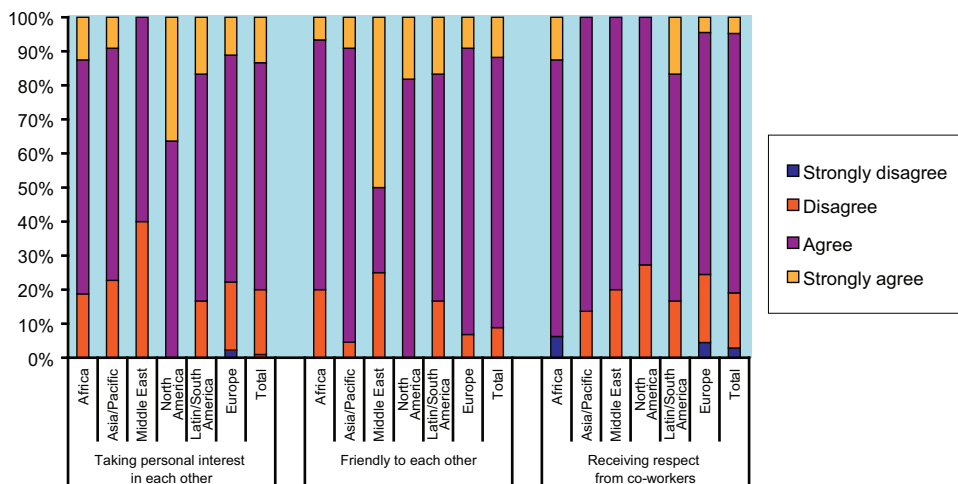
Again red suggests 'danger', orange 'caution' and green 'safety'. Figure 25 explores some key indications for the emotional climate within which workers go about their work. The assumption is a simple one: that workers would be able to work to the best of their abilities if they:

- take a personal interest in each other
- are friendly to each other
- are helpful to each other in getting the job done
- receive respect from superiors
- receive respect from co-workers
- are treated fairly at work.

Looking across all groups, the average reported incidence of unfairness is cause for concern.

**Figure 26. Average Reported Prevalence of Favourable and Unfavourable ‘Emotion Regimes’ and ‘Collective Emotional Labour’, by Region, 2007, All Groups**

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Source: SFS, n = 102

In Figure 26 the red ('danger'), yellow ('caution') and green ('safe') values can all be read in the same way, for all regions and all three questions. The overall pattern is encouraging. Co-workers in civil aviation were reported as respectful, friendly and showed interest in each other. This is conducive to a good emotion regime. The results should be interpreted with caution however, as it is possible that cultural variations affected how the meaning of 'friendliness' and 'respect' was interpreted.

The overall impression created by all figures and data summarised here is that at the world scale, conditions of work fell short of what could reasonably be considered as desirable. The data suggest that those civil aviation workers for whom affecting the mood of others was their primary task, perhaps they accomplished more than conditions should have allowed. These findings suggest a 'deficit' balance between what workers produced towards passengers and the respect and support they received from supervisors. Is this deficit what workers pay for by sleep that leaves them tired and un-refreshed, as many respondents reported? For example, cabin crew reported as having the highest number of maximum duty days also experienced significantly more fatigue when they got up in the morning.

What is the factor that contributed most to fatigue in cabin crew? Perhaps because civil aviation workers and their representatives were not used to ideas like 'emotion work', 'emotional labour' and 'care deficits', they tended to use other descriptions and explanations. The findings of the study indicated a significant, moderate correlation between overtime work estimates and mental fatigue estimates. The factors reported as contributing to fatigue were:

- 'mental fatigue'
- 'overtime fatigue'
- 'physical fatigue'
- 'lack of rest'
- 'long and odd hours'.



Which factors were reported to make the most significant contribution to fatigue varied by occupational group, as described earlier in this Section. Mental fatigue and physical fatigue tended to be reported together. There was some correlation between reports of 'workers feeling burned out' and the responses for maximum duty days, and this correlation was statistically significant.

However it is worth pointing out that lack of respect from supervisors, for example, would contribute to making those hours more fatiguing, just as friendliness and respectfulness exchanged between workers would make them less fatiguing. It is hoped that the nature and experience of fatigue will be understood better when emotional transactions are taken into account.

## Part 4: Social and Economic Security

### A. CHANGES IN INDIVIDUAL SOCIAL AND ECONOMIC SECURITY ISSUES

The evidence found through this study indicates that a powerful and visible increase in stress and fatigue, across all three occupational groups in the civil aviation industry, emerged – worldwide – due to changes that took place between 2000 and 2007. Many of these changes were largely triggered by the events and aftermath of 11th September 2001. However, well before that event the process of de-regulation in the industry had already created immeasurable negative effects, particularly for workers in civil aviation. It would appear that the prevailing context after September 2001 'facilitated' many more major changes that continued through 2007, and which may still continue today. The findings presented in this report indicate that many of the changes have been directly associated with the reported increases in stress and fatigue.

An assessment of changes between 2000 and 2007 that contributed to increased stress and fatigue among civil aviation workers based on the results of measures of burnout, fatigue, shift work, emotional labour, and effort/reward imbalance would not be complete without also examining changes in various critical areas of workers' social and economic security. The latter is a unique aspect of this study. A strong body of evidence demonstrates that social and economic *insecurity* can directly cause or contribute to acute and chronic stress in individuals. A convincing body of evidence shows that chronic stress puts individuals at increased risk of developing chronic diseases, in particular cardio-vascular disease, hypertension, diabetes, stroke, and depression. The results from the combination of these factors known to cause or contribute to stress and fatigue in workers provide a rather comprehensive picture of what changed for civil aviation workers between 2000 and 2007.

In this next part, the results from an examination of changes in individual areas of social and economic security are presented, including indicators of gender inequality. Most of the results presented in this part are based on the aggregate (total) number of responses from all affiliates, in all regions, for each occupational group. Additionally, a picture of the overall direction of changes that took place is presented based on the sum total of all responses, from all affiliates, in all regions, in all three groups combined, for each item examined. Most of the results show the direction of changes that took place for an individual issue amongst the three occupational groups, between 2000 and 2007, rather than the magnitude or precise degree of each change.

Changes between 2000 and 2007 that led to increased social and economic *insecurity* for civil aviation workers should be considered as 'piling on the stressors', on top of the deteriorated conditions described up to now. Social and/or economic insecurity are powerful stressors. Any one factor alone can be a cause of chronic stress. Any combination, particularly on a chronic basis, is a recipe for toxicity to the human organism.

## CHANGES IN INFLUENCE OF UNIONS, COLLECTIVE BARGAINING, AND WORK STRESS

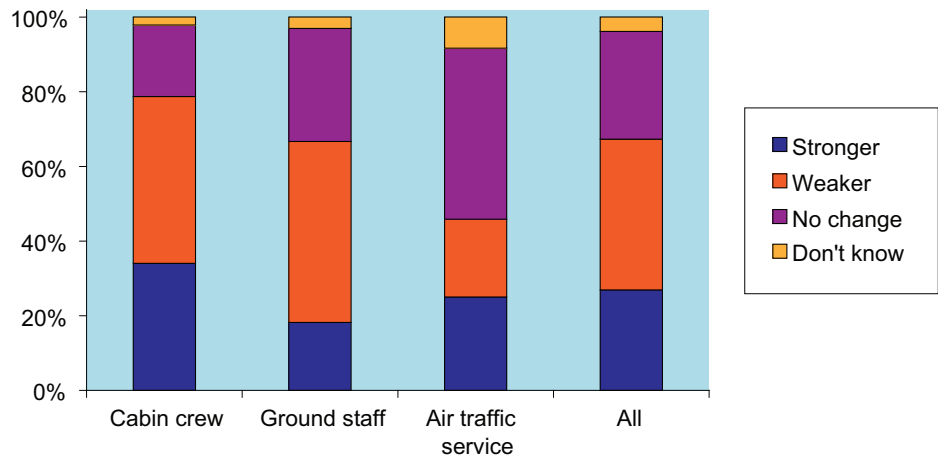
The level of job stress in civil aviation workers is influenced by broader structural conditions within a given organisation, or across the entire civil aviation industry. To illustrate, the following question was examined. Did the reported amount of influence exerted by unions have an effect on the level of work stress experienced in the three occupational groups? The findings indicated, 'Yes', a decrease of influence exerted by unions between 2000 and 2007 was associated with greater work stress.

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A weaker level of influence of unions on relations with employers in 2007 compared to the year 2000, was associated with higher work stress. When asked to evaluate the change in the influence of unions in their relations with employers, 27% of all surveyed affiliates reported increased influence, 40% believed that influence had become weaker, and one third thought conditions had remained unchanged between 2000 and 2008 (Figure 27).

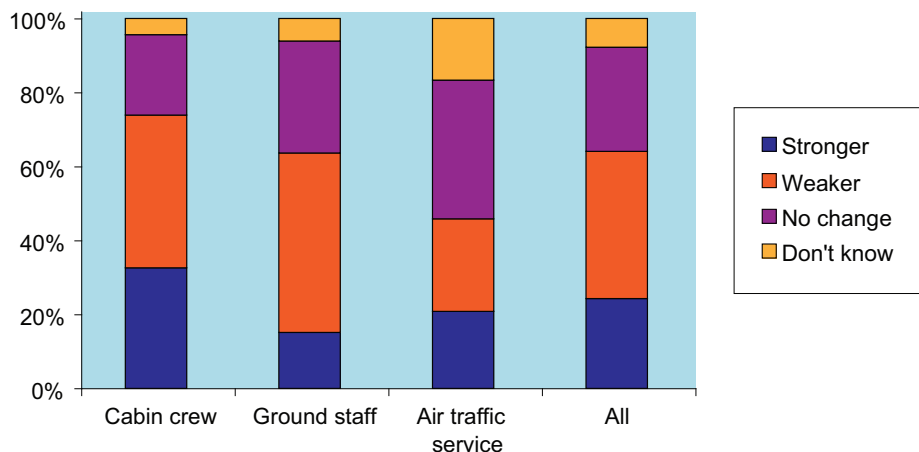
The same was found to be true for the influence of unions on relations with governments (Figure 28). A significantly higher level of overall work stress was reported by representatives of civil aviation workers where union influence had decreased between 2000 and 2007. Indeed, 24% of all surveyed affiliates reported stronger influence, 40% weaker and 28% unchanged conditions.

**Figure 27. Change in influence of unions: Relations with employers, 2000-2007, All Groups**



Source: SFS, n = 105

**Figure 28. Change in influence of unions: Relations with government, 2000-2007, All Groups**



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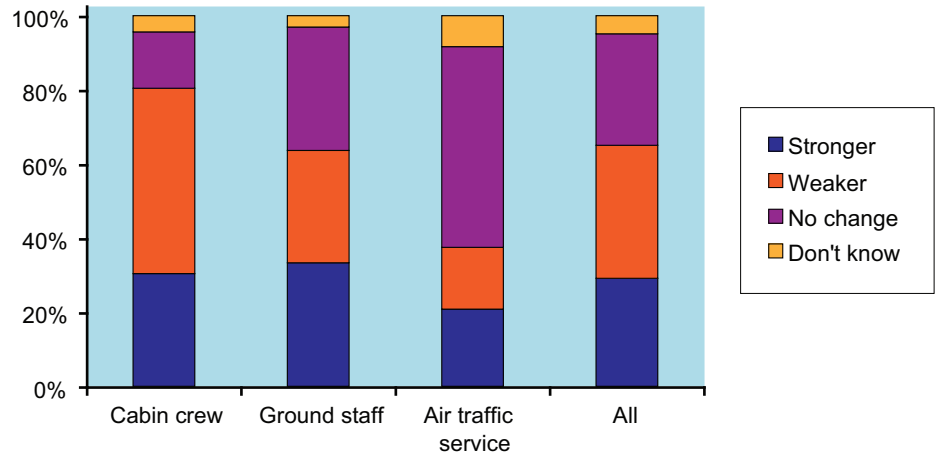
Source: SFS, n = 105

The strongest association, however, was found between overall work stress and changes in the degree of influence unions had on collective agreements. National collective bargaining agreements give workers a voice with regard to their employment and thus foster a sense of control over the workplace. Significantly higher levels of stress (measured by effort-reward imbalance) were found amongst respondents in countries where unions had a weaker influence on collective bargaining agreements. Between 2000 and 2007, the changes that resulted in reduced union influence over civil aviation workers' collective agreements also resulted in higher levels of work-related stress.

According to 29% of all surveyed affiliates, the influence of unions over collective agreements got stronger between 2000 and 2007. At the same time, 36% reported that, in fact, the influence of unions over collective agreements got weaker, with 30% claiming no change in that regard. Amongst the three occupational groups, cabin crew affiliates were the group (50%) reporting the most decline in the influence of unions over collective agreements between 2000 and 2007.

**Figure 29. Change in influence of unions: Collective agreements, 2000-2007, All Groups**

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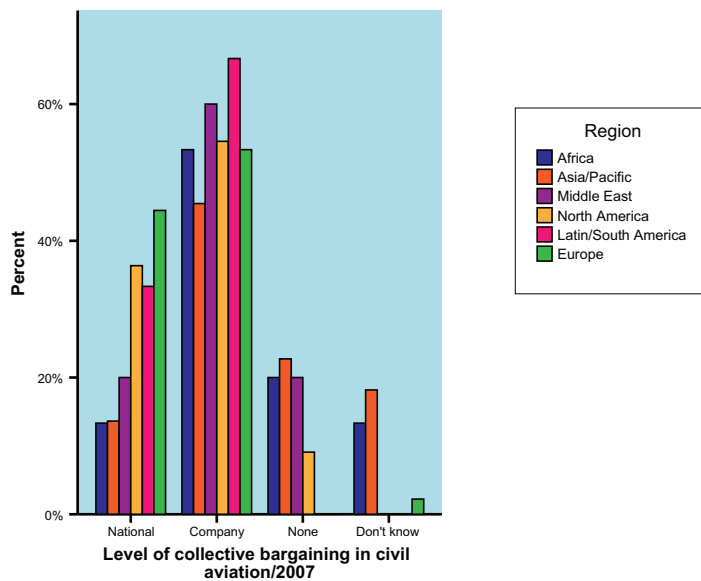


Source: SFS, n = 105

These findings indicate that trade union influence over collective bargaining can have an important connection with work-induced stress experienced by workers, meaning that strong union influence over collective bargaining can help to *reduce* work stress. Higher levels of overall work stress were found where union representatives saw no level of collective bargaining – either at the company level or at national level – compared with affiliates who had some option of collective bargaining. Salaries, prospects for promotion, and job security tended to be lower in countries where there was no established collective bargaining process. Job-related rewards did not seem to be related to whether collective bargaining took place at the company or national level.

This study confirmed that employment security was reported to be lowest where civil aviation workers had no access to any form of collective bargaining, while job security was higher among those with at least one option of bargaining. Whether bargaining took place at company level or national level did not seem to make any difference. The existence of national collective bargaining agreements was found to be very low in Africa, Asia/Pacific and the Middle East. Types of collective bargaining agreements existing by regions, as reported by all affiliates, are shown in Figure 30.

**Figure 30: Collective Bargaining, by Regions**



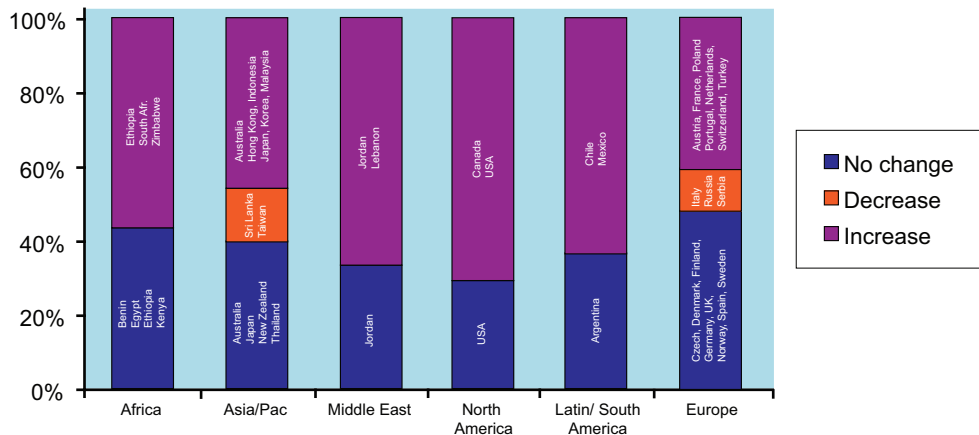
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***PRECARIOUS WORK: CHANGES IN FREQUENCY OF TEMPORARY AND CONTRACT LABOUR, OUTSOURCING, AND WORK STRESS***

Another important determinant of stress at work concerned the prevalence of precarious work. The ease with which temporary workers have been hired between 2000 and 2007, changes in the degree of outsourcing between these dates, and the prevalence of employees with fixed contracts can be used as proxy measures of precarious work amongst civil aviation workers.

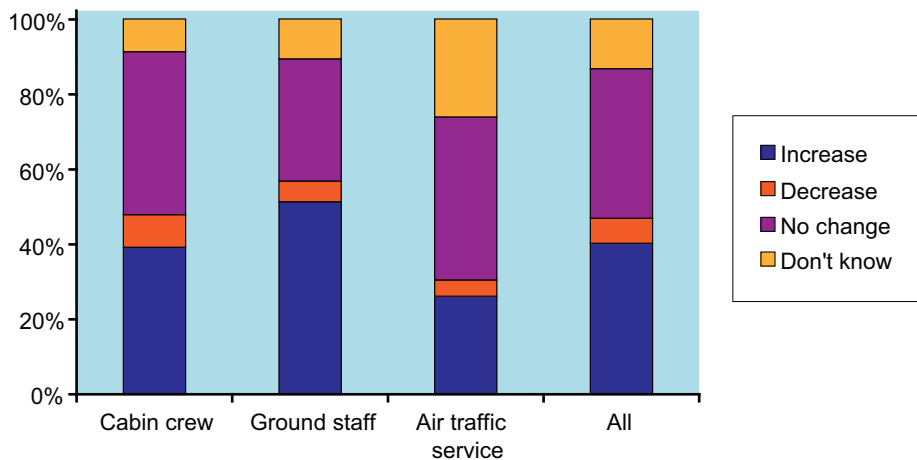
The results indicated an increase in outsourcing between 2000 and 2007, in all regions, for all three groups, as shown in Figures 31 and 32 below.

**Figure 31. Changes in Precarious Work between 2000 and 2007, by regions: Outsourcing**



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**Figure 32. Change in job outsourcing, 2000-2007, All Groups**

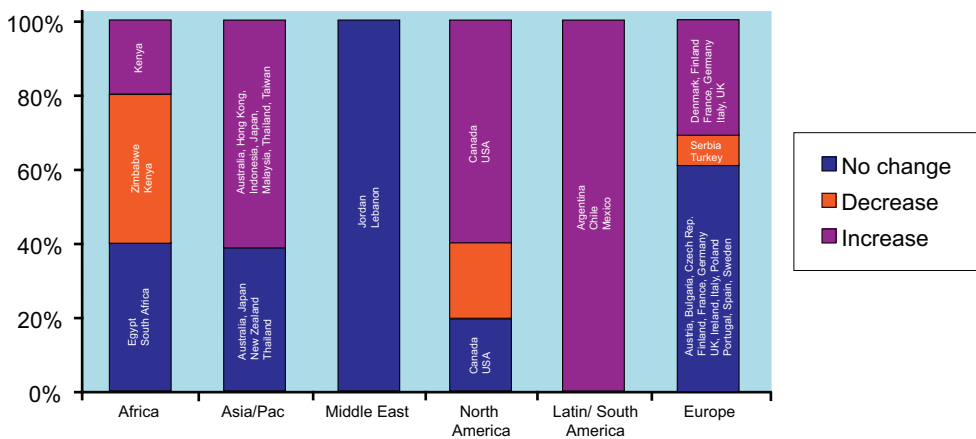


Source: SFS, n = 105

Furthermore, the findings revealed that changes between 2000 and 2007 in the frequency of hiring temporary and contract labour workers were strongly associated with reported overall work stress, measured both by an imbalance between efforts and rewards and by fatigue and burnout scales. As shown in Figures 33 and 34, the findings indicated that the percentage of short-term contracts (contracts of less than 1 year) increased between 2000 and 2007, in all regions except Latin/South America, among all three occupational groups.

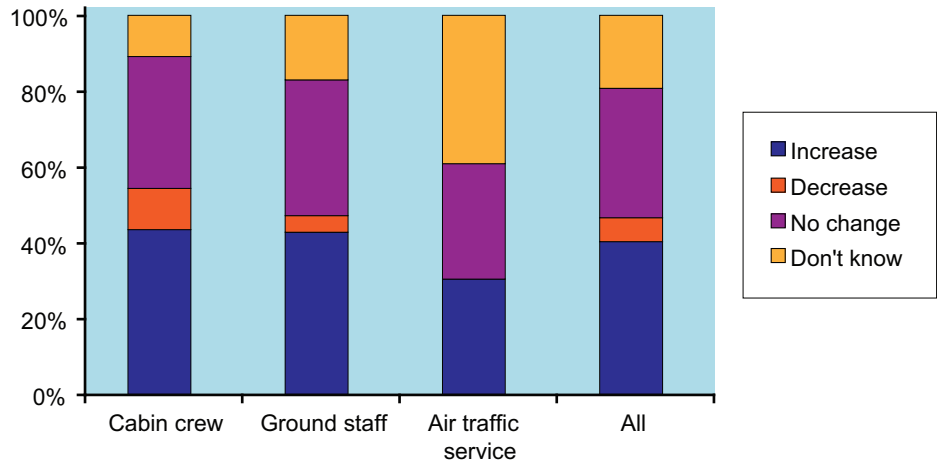
In the Middle East, between 2000 and 2007 there was a universal increase in the use of short-term contracts among all three groups. As an emerging market, these results would appear to indicate that while the sector is growing in that region, the growth is taking place through the use of temporary and short-term contracts. Hence precarious work and its accompanying insecurity risk dominating the civil aviation workforce in the Middle East. The same would appear to be the case for Asia/Pacific, also a rapidly emerging market, where growth appears to be taking place in the form of precarious work. The significant increase, between 2000 and 2007, in the use of short-term contracts among all three groups in Europe is worrying, particularly considering that regulation has remained stronger in Europe than in any other region since 2000, and because Europe is a region where unions have a long history of strength and influence in policy-making. The reported significant increase in Europe indicates a serious decline in conditions, a marked growth in the various forms of social and economic insecurity that accompany precariousness, and a parallel increase in work-induced stress. These findings may be due to a loss of union strength in Europe, a seemingly inevitable outcome of the powerful forces of globalisation, unfettered capitalism, and de-regulation in the civil aviation industry.

**Figure 33. Changes in Precarious Work between 2000 and 2007, by regions:  
Percentage of short-term contracts (less than 1 year)**



Overall, the use of short-term contracts increased between 2000 and 2007. Indeed, 40% of all surveyed affiliates reported that there had been an increase in the use of short-term contracts, only 6% believed there had been a decrease in the use of short-term contracts, and one third said there had been no real change. Notably, a substantial number of all surveyed affiliates (20%) reported no knowledge of the matter. In striking contrast to the other occupational groups, no positive changes at all were reported by air traffic service affiliates. It should be noted, however, that the air traffic service affiliates also had the highest percentage (40%) reporting absence of any knowledge of the matter.

**Figure 34. Change in short term contracts, 2000-2007, All Groups**



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Source: SFS, n = 105

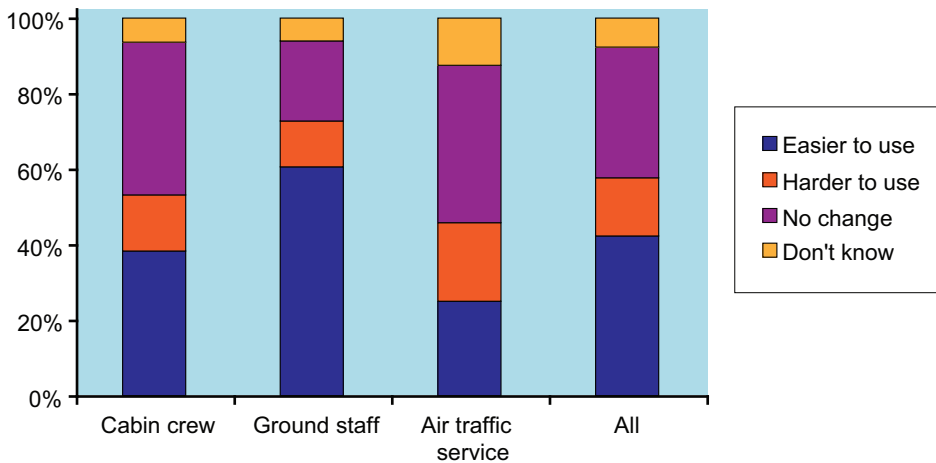
**THE CONTRIBUTION OF LEGISLATIVE CHANGES**

Nearly half (42%) of all surveyed affiliates, from all regions, reported that legislative changes occurred between 2000 and 2007 that made it easier for management to use temporary or contract labour (Figure 35). Only 15% of all respondents thought it had become more difficult for management to use contract labour, while more than one third (35%) reported no real change in the situation – neither improvement nor a worsening in the ease of use of temporary or contract labour. All three occupational groups experienced changes in legislation that allowed for an increase in temporary work. This is cause for concern particularly because temporary and contract labour is equated with less protected or entirely unprotected work, leaving such workers more vulnerable to work-induced accidents, illness, stress, fatigue, and more social and economic insecurity in all areas.

Nearly two thirds of all ground staff affiliates, encompassing all regions, experienced the greatest amount of change in legislation between 2000 and 2007 that made it easier for employers to use temporary labour. This should be interpreted to mean that ground staff workers faced increasingly precarious conditions of work. As this condition of deterioration facilitated by legislative changes continued from 2000 to 2007, there is little reason to think that the situation will be reversed suddenly, particularly for ground staff workers, who faced the greatest degree of precariousness and overall insecurity. This issue as it relates to ground staff in particular, is discussed in more detail in Section V (ground staff), Part I of this report.



**Figure 35. Change in use of temporary or contract labour, 2000-2007, All Groups**



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Source: SFS, n = 105

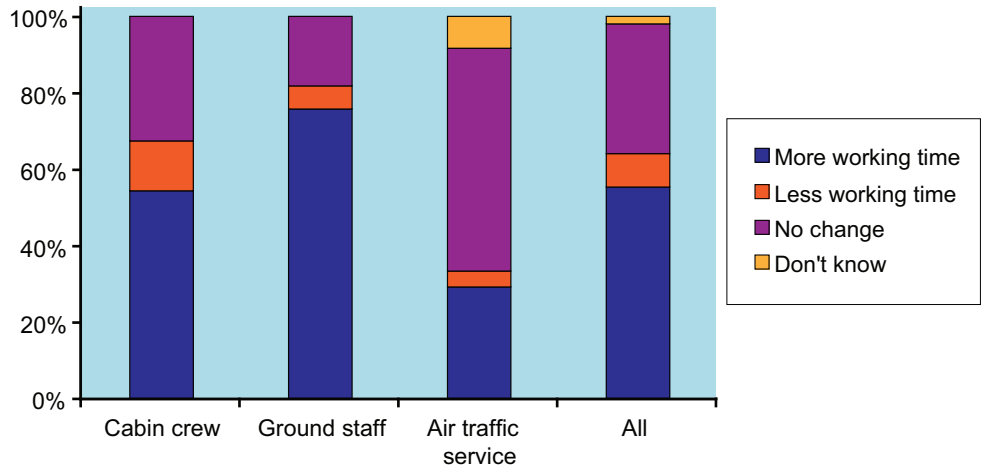
In general, it was found that easier use of temporary and contract labour was associated with a higher level of work stress, among all three groups of civil aviation workers. The same results were found for job security, and for the prospects of job promotion being associated with reported overall work stress. It is not surprising to find that increases in these negative individual factors were associated with increased work stress during the same period of time. Job and income insecurity are serious and chronic stressors for any individual. Not knowing if you will have a job after completion of a six-month work contract, for example, is a heavy burden to bear; not to mention the continuous and cumulative stress of having to continue to look for a new job all the time, with no predictable income from month to month, and the serious adverse impacts on one's health that such circumstances can produce.

Between 2000 and 2007, according to over half (55%) of all surveyed affiliates, from all regions, legislative changes took place which made it easier for overtime work to be implemented (Figure 36). Across the board, all groups reported increases in working time since 2000. Working time remained unchanged for some 35% of affiliates in all three occupational groups, and a negligible number of total affiliates from all three groups (9%) reported that working time actually decreased as a result of legislative changes.

Ground staff affiliates appeared to be the most affected group, with a majority (76%) of ground staff affiliates reporting increased working time and/or overtime hours spurred by legislative changes. Of equally great concern is that approximately half of cabin crew affiliates also reported that between 2000 and 2007, changes in legislation occurred making it easier to increase working time and/or overtime. The majority of air traffic service affiliates believed the situation remained relatively unchanged during the time period; however this too is a worrying finding since it indicates that pre-existing long working hours were not reduced for air traffic service workers between 2000 and 2007.

**Figure 36. Change in working time and/or overtime hours, 2000-2007, All Groups**

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Source: SFS, n = 105

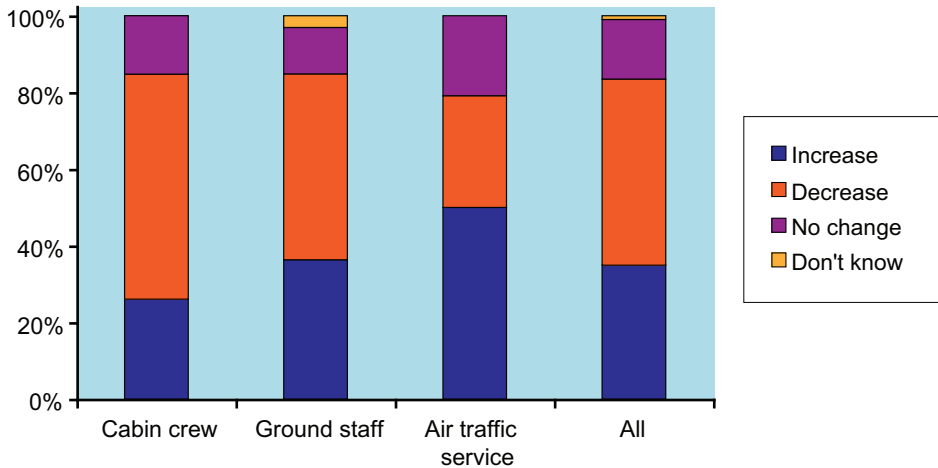
**Key points:**

- Precarious work is highly stressful, and on a chronic basis its cumulative effects have the potential to be highly damaging to health.
- An increase in precarious jobs included more outsourcing of jobs in all regions, and a decrease in job outsourcing occurred in only a couple of countries.
- Between 2000 and 2007, the percentage of short-term contracts increased substantially in most regions except in the Americas.
- Weaker influence of unions (especially on collective agreements) in 2007 compared with 2000 went along with higher level of work stress in terms of effort-reward imbalance.
- Changes in the influence of unions between 2000 and 2007 affected all job reward dimensions, in particular job security, perspectives for job promotion, and salary.
- The higher frequency of using temporary and contract labour workers in 2007 compared to 2000 was associated with a higher level of reported overall work stress, amongst all three groups of civil aviation workers.
- Salaries, the prospects for promotion, and job security were lower in countries where there was no perceived option of an established collective bargaining process.
- Precarious employment (non-permanent, part-time, and temporary work) leads to a loss of job security, results in increased requirements for training people, causes a loss of social networks, creates repeated task re-organisation, leads to an increase in job demands with a decrease in control over one's work, and a decrease in social support.

## WAGES, INVOLUNTARY JOB LOSS, AND COLLECTIVE ACTION

What happened to civil aviation workers' real wages between 2000 and 2007 – were there changes that took place (Figure 37)? For nearly half (49%) of all surveyed affiliates, real wages decreased between 2000 and 2007. For 16%, real wages neither increased nor decreased. The overall trend points to decreased real wages since 2000, indicating changes toward more income insecurity for all civil aviation workers, among all three occupational groups. Nearly 60% of cabin crew affiliates reported a decline in cabin crew workers' real wages since 2000, with ground staff not trailing far behind, also reporting a significant decrease in real wages.

**Figure 37. Change in real wage, 2000-2007, All Groups**



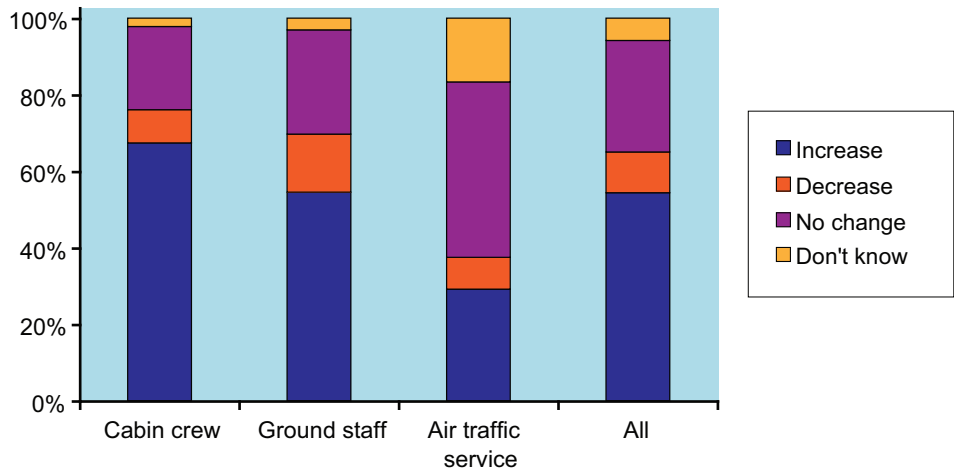
Source: SFS, n = 105

An indicator of increased social and economic insecurity is involuntary job loss. The results, shown in Figure 38, present a picture of a grave situation, one that became much worse between 2000 and 2007. As reported by affiliates, involuntary job losses substantially increased between 2000 and 2007, across all groups except air traffic services, where an increase in involuntary job loss was less pronounced, as reported by 8% of the surveyed ATS affiliates. Over half (55%) of cabin crew affiliates reported increases in involuntary job losses between 2000 and 2007. Overall, increased involuntary job losses were reported by more than half (54%) of all surveyed affiliates, a mere 11% reported a decrease, and just under 30% reported that they saw no change.

Thus, between 2000 and 2007, many civil aviation workers worldwide lost their jobs. While loss of one's job obviously leaves the affected worker in an extremely insecure life situation, the impacts on those not losing their jobs (yet) also should be considered attentively. Workers witnessing job loss around them typically fear that they might 'be next'. This provokes stress, worry, and mental preoccupation. It is possible that those still employed would react to such a situation by performing at their top level at all times, hoping to appear indispensable to management. However, it is equally possible that the stress induced by witnessing widespread job losses leaves workers unable to perform at their best level. Once again, these findings should be considered in the context of implications for public safety and security.

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**Figure 38. Change in involuntary job loss, 2000-2007, All Groups**



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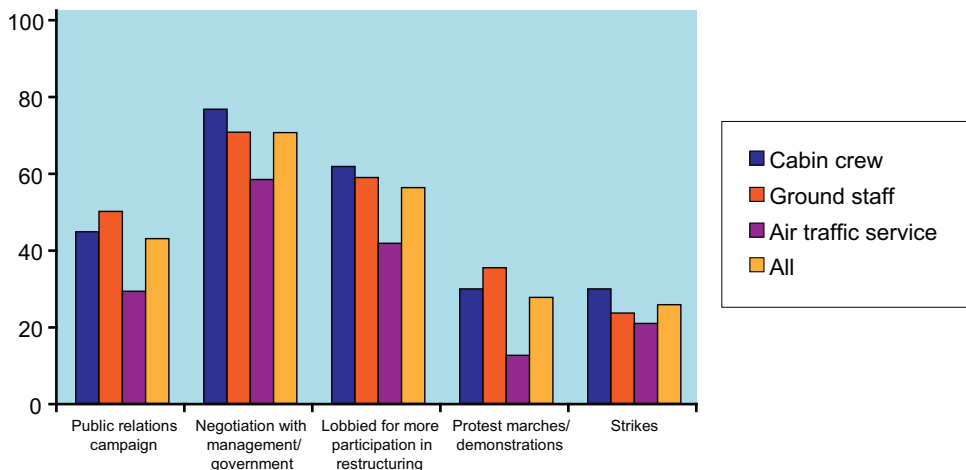
Source: SFS, n = 105

In the face of so much deterioration in civil aviation workers' conditions of work worldwide, ITF affiliates and the local unions to which their members belonged were not passive in response. As shown in Figure 39, a wide variety of collective actions were reported to have taken place between 2000 and 2007 in protest, response, and resistance to specific changes that occurred as well as to the over-arching policies that enabled those changes to take root.

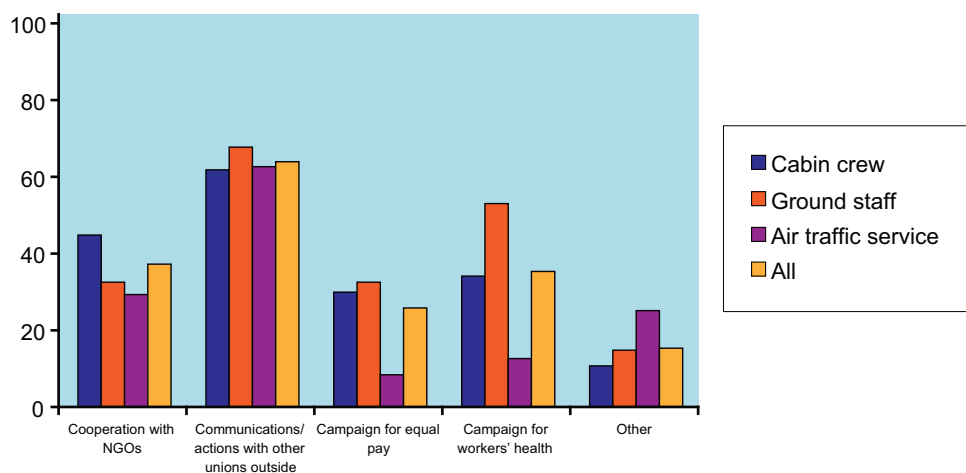
Between 2000 and 2007, unions around the world launched various initiatives in support of civil aviation workers:

- 43% of all surveyed affiliates reported that unions had conducted public relations campaigns,
- over 70% said they had held negotiations with management/government
- more than half thought the unions had lobbied for more worker participation in restructuring
- about 30% said they had been involved in protest marches/demonstrations
- just over one quarter reported that they had participated in strikes
- 37% pointed to their having cooperated with non governmental organisations (NGOs)
- two thirds highlighted their communications/actions with other unions
- slightly more than one quarter cited they had had campaigns for equal pay
- 35% reported unions campaigning for workers' health, and
- 15% reported that they had carried out other non-specific activities.

**Figure 39. Actions against liberalisation/deregulation, 2000-2007, All Groups**



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Source: SFS, n = 105

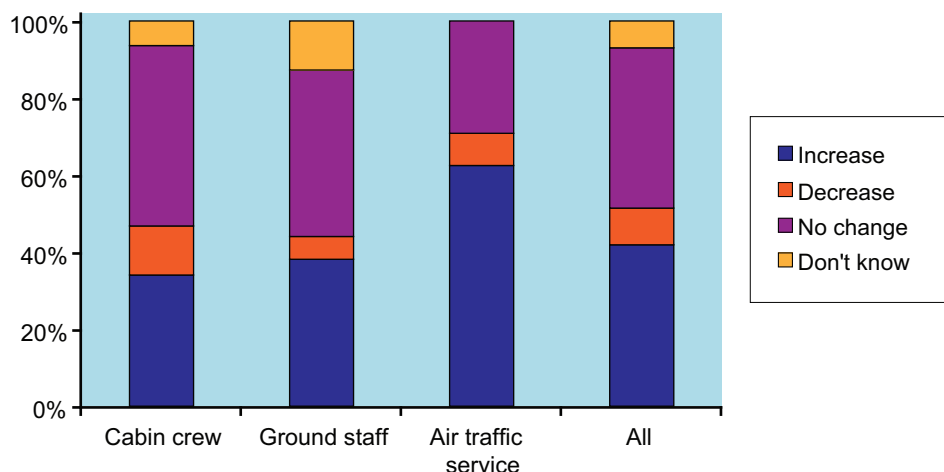
**INDICATORS OF GENDER INEQUALITY**

Figures 40 to 43 show the findings for various questions that were asked in the surveys to gain an understanding of changes that occurred related to gender equality/inequality among civil aviation workers worldwide during the time period.

Between 2000 and 2007 did the percentage of women civil aviation workers increase, decrease or stay about the same? Overall, 44% of all surveyed affiliates reported an increase in the share of female workers in the civil aviation sector between 2000 and 2007. 10% said that the share of female workers had decreased, and 44% reported that it had remained unchanged (Figure 40).

Among the various occupational groups, air traffic service affiliates were the largest group reporting an increase in the share of female workers. This latter finding is explained by the fact that very few women workers are found in air traffic services to begin with; very often the air traffic environment has a military background/tradition (all male) and only very slowly builds female participation. Thus, air traffic services being the largest group reporting an increase in the share of female workers may be a result that sounds big, but in real numbers was still very small.

**Figure 40. Change in share of female workers, 2000-2007, All Groups**

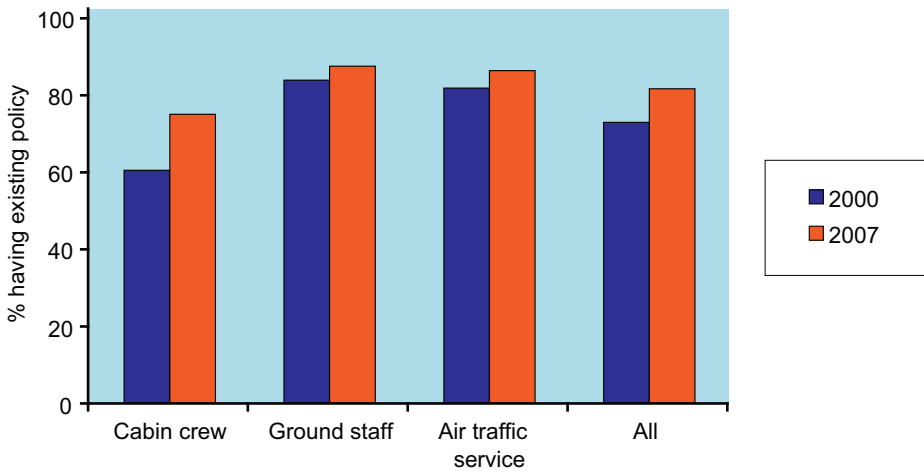


Source: SFS, n = 105

In 2000 and 2007, did policies exist to guarantee equal rights for men and women in civil aviation? Figure 41 shows that overall between 2000 and 2007 a slightly positive change took place with regard to existing policies of equal rights between men and women. Indeed, while an important 73% of respondents, from all groups, stated that there was a policy of equal rights for men and women in 2000, an even higher percentage of all surveyed affiliates (82%) reported that such a policy existed in 2007. Among the various occupational groups, cabin crew affiliates were more likely to report improved conditions, with 60% of all cabin crew affiliates citing the existence of such a policy in 2000, and a significant 75% confirming that such a policy was in place in 2007.

Positive changes notwithstanding, the fact that nearly 20% of all affiliates reported the absence of any such policy in 2007 is an alarming trend.

**Figure 41. Change in existing policy of equal rights for men and women, 2000-2007, All Groups**



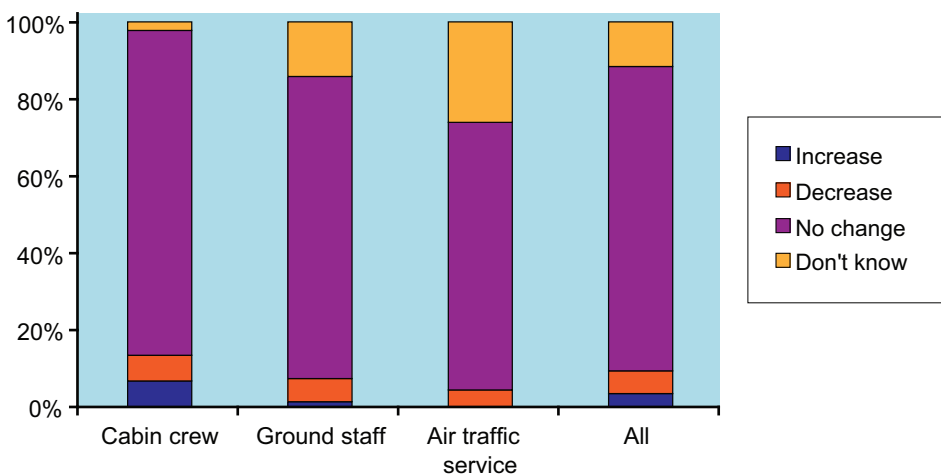
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Source: SFS, n = 105

The study examined whether between 2000 and 2007 there had been an increase, decrease or no real change in gaps between men’s and women’s salaries and wages when performing the same civil aviation job. The results warrant serious attention (Figure 42).

A worrying 80% of all surveyed affiliates reported that between 2000 and 2007 there had been no change in the gaps between men’s and women’s salaries and wages when performing the same job, in addition to 12% who had no knowledge of the matter. With small shares of respondents reporting an increase (3%) and decrease (6%) in the wage gap, it is safe to conclude that the wage gap between men and women did not change dramatically and mostly stayed at the same level between 2000 and 2007.

**Figure 42. Change in wage gap between men and women, 2000-2007, All Groups**



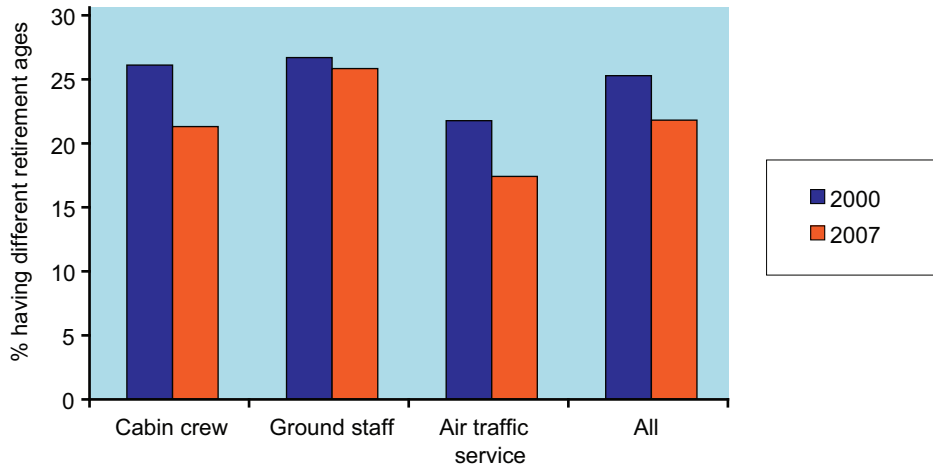
Source: SFS, n = 105

Thus, this strong indicator of gender inequality did not improve during the time period. No air traffic service affiliates reported any increase in the wage gap between men and women, although more than one quarter (26%) of ATS affiliates said they had no real knowledge of the matter. The sense of injustice felt from earning less money than a man performing the same job – *simply because you are female* – should be considered as a serious cause of stress. It reflects a clear imbalance between effort put into one’s job and rewards received of the most fundamental nature – wages/salaries.

In continuing to examine whether there had been changes in indicators of gender inequality between 2000 and 2007, affiliates were asked about differences in obligatory retirement ages for male and female civil aviation workers (Figure 43).

Gender inequality in the workplace persisted based on the results of this indicator, similar to the overall lack of change to eliminate wage gaps between men and women. More than one fifth of all affiliates reported continued differentiation between obligatory retirement ages for male and female workers. Among the various occupational groups, ground staff affiliates were the largest group reporting persistent gender inequality in connection with retirement age. 27% of ground staff affiliates said that such differentiation existed in 2000 and 26% said it still existed in 2007.

**Figure 43. Change in different obligatory retirement ages for men and women, 2000-2007, All Groups**



Source: SFS, n = 105

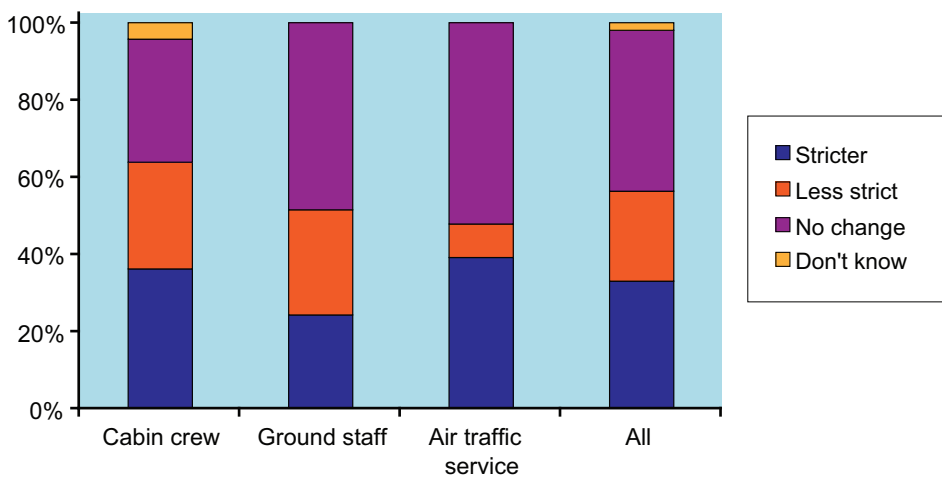
Figures 44 to 49 present the results revealed for various individual occupational health and safety indicators. The findings paint a picture of severe deterioration in working conditions between 2000 and 2007, the impacts of which have produced alarmingly serious adverse effects on aviation workers’ health.



The concept of 'work security'<sup>33,34</sup> is introduced here in relation to working conditions that are safe and promote workers' health and well-being. Traditional occupational health and safety provisions protecting workers from occupational hazards, diseases, and injuries are a key component. However, work security goes beyond the traditional concept by also addressing work-related stress, overwork, absenteeism, maternity protection, violence at work, harassment, protection for whistle-blowers, and more. Protections include provisions and insurance against accidents and illness at work, and limits on working time. Work security (discussed in more detail in sub-section B below), in the form of occupational health and safety, is complex, and new risks to workers' health and well-being seem to be identified all the time, including among civil aviation workers.

If legislative changes took place making it easier for employers to use overtime work, and short-term contracts, were there also changes, between 2000 and 2007, in the laws or the application of laws in the civil aviation sector that had resulted in health and safety regulations becoming stricter or less strict (Figure 44)?

**Figure 44. Change in health and safety regulations, 2000-2007, All Groups**



Source: SFS, n = 105

Overall, no dramatic developments appeared to have taken place between 2000 and 2007 with regard to changes in health and safety regulations. All groups reported some changes in laws or the application of laws which resulted in health and safety regulations becoming stricter – a much-desired outcome for the protection of civil aviation workers' health.

However, all groups also reported some changes in legislation that made it easier for management to be less strict, less rigorous in the application of health and safety regulations. It is important to note that ground staff affiliates were the least likely of the three groups to report any improvements at all in health and safety regulations between 2000 and 2007. Less than one quarter of ground staff affiliates said that legislative changes resulted in stricter, more protective health and safety regulations within the sector. Taking all three groups together, one-third of all surveyed affiliates reported stricter regulations for health and safety, less than one quarter said health and safety regulations became weaker or less stringent, and slightly more than 40% reported that the regulations had remained unchanged.

33 P Annycke, F Bonnet, A Khan, J Figueiredo, E Roskam, G Standing, L Zsoldos, Economic security for a better world, International Labor Office, Geneva, 2004.

34 M Keith, J Brophy, P Kirby, E Roskam, Barefoot Research: A Workers' manual for organising on work security, International Labor Office, Geneva, 2002.

Health and safety regulations are weak (or entirely absent) in some two thirds of countries of the world.<sup>35</sup> Thus reports of health and safety regulations becoming even weaker for civil aviation workers is worrying and cause for immediate attention, given the strikingly high toll of deaths each day worldwide due to occupational accidents and diseases. The International Labour Office estimates that over two million workers die each year from work-related accidents and diseases, and that globally this figure is on the rise.<sup>36</sup> Given that already in 2000 health and safety regulations and implemented protections for civil aviation workers were weak in most parts of the world, 'no change' is a most unfavourable outcome in an area so critically in need of stricter laws and their application.

Overall, the findings from this investigation indicated that between 2000 and 2007, work security markedly deteriorated for cabin crew, ground staff, and air traffic services, and that work-related health and related problems intensified. All three occupational groups reported that between 2000 and 2007 there were increases in the pressure to complete work tasks, in the number of working hours (including overtime), and in absenteeism.

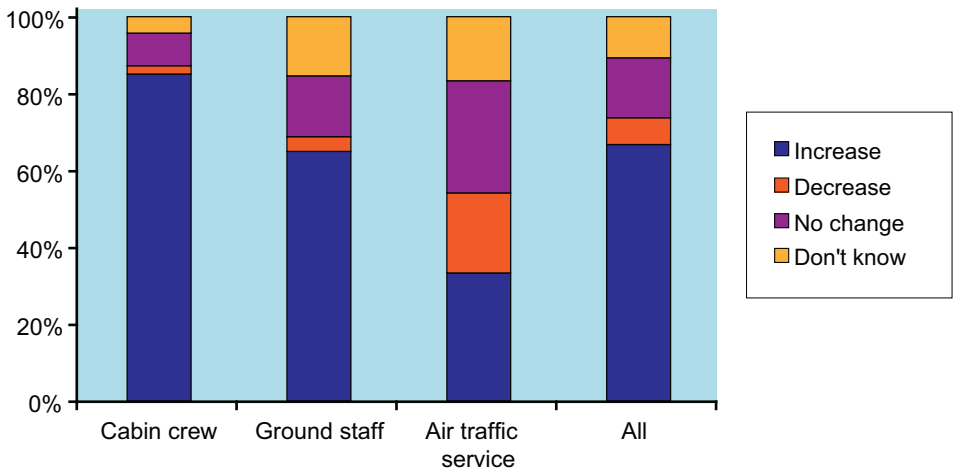
A very significant percentage of affiliates from all three groups reported that absenteeism increased between 2000 and 2007 (Figure 45). More than two thirds (68%) of all surveyed affiliates reported increases in absenteeism between 2000 and 2007, which can be a strong indicator of increased levels of stress, fatigue, and work-related anxiety. These findings are alarming. Among the various occupational groups, cabin crew affiliates were more likely to report increases in absenteeism during the time period, indeed the vast majority (85%) reported that absenteeism rates had increased since 2000. Although air traffic service affiliates were the least likely to cite increases in absenteeism between 2000 and 2007, nonetheless over one quarter of all air traffic service affiliates worldwide reported that absenteeism had increased between 2000 and 2007.

On the one hand, these results indicate that the impacts of negative changes during the time period took a very real toll on workers' health. On the other hand, these findings have potentially equally important implications for the health of the workers who were not absent. Unless adequate replacement is ensured, an increase in absenteeism is likely to lead to lower productivity, increased overtime and fatigue among other workers, may compromise the quality of work, and increase the risk of accidents for the workers who are not absent. Increases in absenteeism suggest increased levels of stress, fatigue, and work-related anxiety. These findings are worrying and warrant immediate attention.

35 P Annycke, F Bonnet, A Khan, J Figueiredo, E Roskam, G Standing, L Zsoldos, Economic security for a better world, International Labor Office, Geneva, 2004. This was the conclusion drawn from the Work Security Index developed by the ILO, assessing the level of performance of 95 countries' governments in their protection of workers' health and safety, pp 191-198.

36 Conclusions concerning ILO Standards-Related Activities in the Area of Occupational Safety and Health: A Global Strategy, International Labour Conference Provisional Record 22, 91st Session (Geneva, 2003).

**Figure 45. Change in amount of absenteeism, 2000-2007, All Groups**



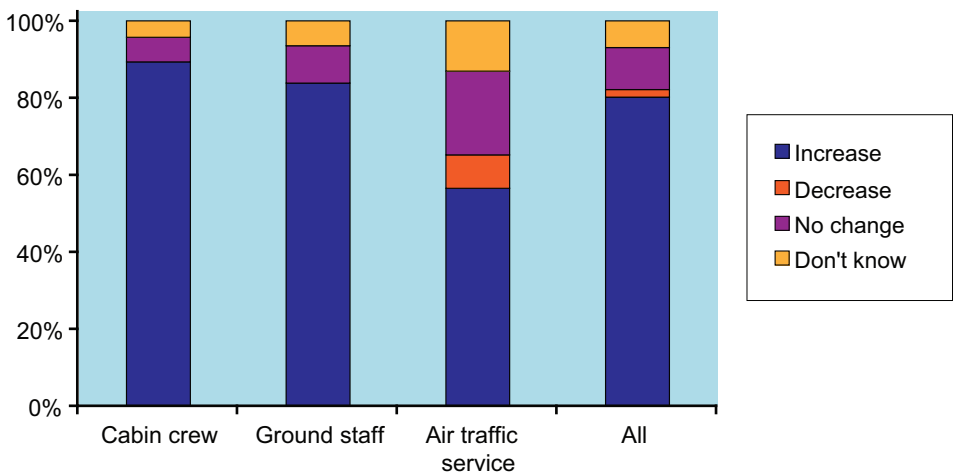
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Source: SFS, n = 105

Figure 46 suggests an overwhelming increase in work-related stress cases were reported between 2000 and 2007.

Overall, 80% of all surveyed affiliates reported that the number of work-related stress cases had increased during the time period. 11% believed that that number had remained unchanged. No improvements at all were reported by cabin crew and ground staff affiliates, the vast majority of whom (89% and 84% respectively) said that the occurrence of work-related stress cases had increased during the time period.

**Figure 46. Change in work-related stress cases, 2000-2007, All Groups**



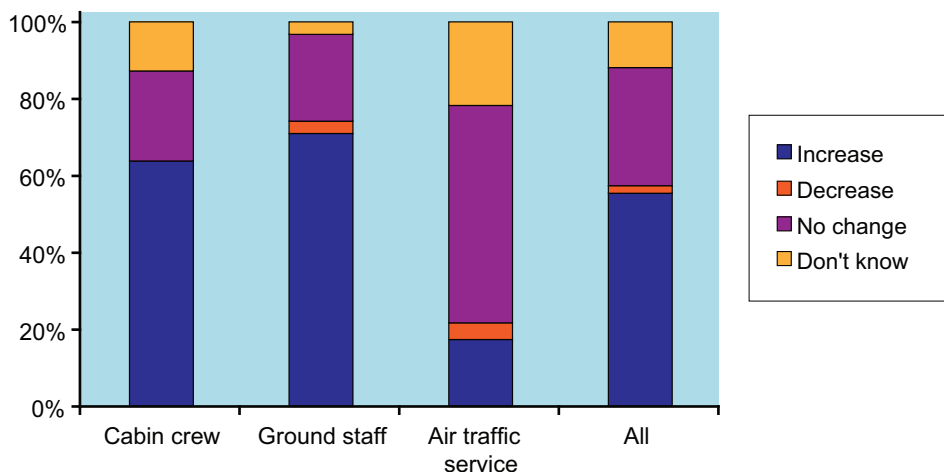
Source: SFS, n = 105

These findings should be considered together with the results in *changes in the recognition of stress as a compensable occupational disease*. There was virtually no positive change in the reported recognition of stress as a compensable occupational disease between 2000 and 2007 for cabin crew, ground staff, or air traffic services.

- 68% of ATS affiliates reported that stress was not recognized as a compensable occupational disease in 2000, and 62% said it still was not in 2007.
- The vast majority (80%) of cabin crew affiliates reported that work-induced stress was not recognized as a compensable occupational disease in 2000, and 78% said it still was not in 2007.
- The vast majority of ground staff affiliates reported that work-related stress was not recognized as a compensable occupational disease in 2000, and 68% said it still was not in 2007.

Thus, cases of work-related stress reported to union affiliates around the world increased significantly between 2000 and 2007, but workers' compensation was rare. It was, therefore, civil aviation workers and their families who bore the direct and indirect costs associated with work-related stress.

**Figure 47. Change in number of workplace injuries/accidents/illnesses, 2000-2007, All Groups**



Source: SFS, n = 105

A similar trend emerged with regard to the change in the number of workplace injuries/accidents/illnesses between 2000 and 2007, except that more affiliates reported unchanged conditions for workplace injuries/accidents/illnesses than for cases of work-related stress – particularly air traffic service affiliates. Overall, more than half (55%) of all respondents reported that the number of workplace injuries/accidents/illnesses increased between 2000 and 2007. A tiny 2% of the total reported that the number had decreased, while nearly one third (31%) noticed no change (Figure 47).

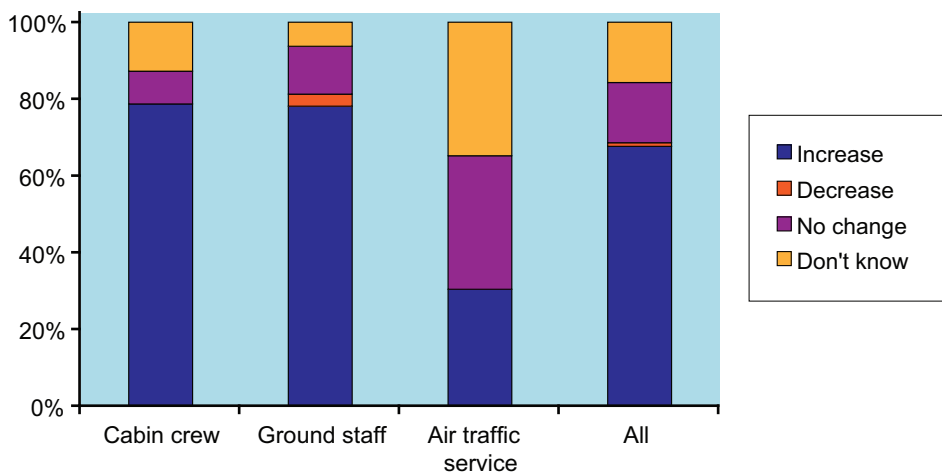
- Cabin crew affiliates reported that there had been no improvements at all in the number of workplace injuries/accidents/illnesses between 2000 and 2007.

- Very important shares of ground staff (71%) and cabin crew (64%), as well as 17% of air traffic service affiliates reported that there had been an increase in workplace injuries/accidents/illnesses between 2000 and 2007.
- A mere 3% of ground staff and 4% of air traffic service affiliates reported that there had been a decrease in the number of cases of workplace injuries, accidents, and illnesses during the time period.

In interpreting these findings it is important to note that the lower average share of 'Increase' in the number of workplace injuries/accidents/illnesses shown for *All* groups (compared with the high share of cabin crew and ground staff affiliates that reported increases) was due to the high share of air traffic service affiliates (57%) who reported that there had been 'No change' in the situation, and the 22% of Air Traffic Service affiliates who said they 'Did not know'. It is possible that some affiliates responded 'No change' when they may not have been familiar with the number of official reports in 2000 and then for 2007.

Overall, these findings indicate that quite the contrary to any reduction in the overall number of workplace injuries/accidents/illnesses between 2000 and 2007, there were significant increases in officially reported incidences. It would be reasonable to expect that such events would decrease over this seven year time period, however, clearly the situation worsened significantly between 2000 and 2007, for all three groups.

**Figure 48. Change in number of cases of musculoskeletal pains/problems, 2000-2007, All Groups**



Source: SFS, n = 105

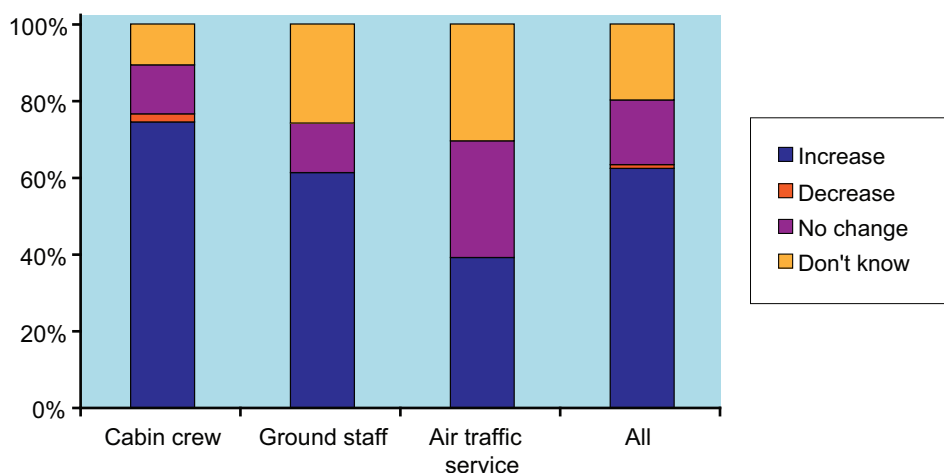
Overall, and of important significance, nearly 70% of all respondents reported increases between 2000 and 2007 in the number of cases of musculoskeletal pains and problems among their members (Figure 48). At the same time, only 1% cited the opposite trend, in addition to 16%, who thought the situation had remained unchanged. An equal share cited no knowledge of the matter.

- Massive shares of both cabin crew and ground staff affiliates reported increases in the number of cases of musculoskeletal pains/problems occurring between 2000 and 2007 (79% and 78% respectively).
- Nearly a third of all air traffic service affiliates reported similar increases.
- No improvements at all were reported by either cabin crew or air traffic service affiliates.
- A mere 3% of ground staff affiliates reported any decrease in numbers of cases.

The finding that one third of air traffic service affiliates reported that they did not know whether there had been an increase, decrease or no change in the number of cases may indicate that globally, air traffic service affiliates need to be more proactive in collecting information about such cases from their members.

Clearly an occupational culture of pain and suffering became significantly worse between 2000 and 2007. It would appear that the vast majority of civil aviation workers around the world have been long-suffering from musculoskeletal pains and related problems. An important and copious body of scientific literature exists on work-related musculoskeletal disorders, related absenteeism, costs, resulting disability, and prevention.<sup>37</sup> Given the quantity of knowledge that has been available since well before 2000 about the prevention of musculoskeletal disorders, such significant increases should be seen as unreasonable and unacceptable.

**Figure 49. Change in cases of sleep disorders, 2000-2007, All Groups**



Source: SFS, n = 105

A most worrying finding is that nearly two thirds (62%) of all surveyed affiliates reported increases between 2000 and 2007 in cases of sleep disorders (Figure 49). These results warrant immediate attention given the obvious relationship between sleep disorders, fatigue, chronic sleep deprivation and performance on the job, attentiveness and alertness. Once more, these are findings with clear and serious implications for public safety and security. Only 1% of affiliates worldwide reported a decrease in reported cases of sleep disorders, 17% of affiliates thought the situation remained unchanged, and 20% had no knowledge of the matter.

Looking at the various occupational groups:

- Cabin crew affiliates reported increased occurrences of sleep disorders in the largest numbers (74%).
- Neither ground staff nor air traffic service affiliates reported any positive changes in this area.
- Across all occupational groups, a substantial number of affiliates had no knowledge of any changes pertaining to cases of sleep disorders.

<sup>37</sup> E Roskam, *Excess Baggage: Leveling the load and changing the workplace*, Baywood, New York, 2007.

The findings that 17% of affiliates reported that the situation remained unchanged between 2000 and 2007 should be interpreted with some caution. The 'unchanged situation' does not mean that there were *not* cases of sleep disorders existing during the period; but the result also does not indicate that there were any such cases during the period. It simply means that whatever the situation was in 2000 remained pretty much the same by the year 2007. Similarly, the finding that 20% of affiliates did not know if there had been a change in cases of sleep disorders does not say anything about whether cases existed already or not. Taking into account all of the findings generated by this global study, it would seem safe to conclude that cases of sleep disorders existed in 2000, in all three groups, in all regions, and that cases still existed every year thereafter until 2007.

The findings for ground staff overall point to an important and progressively worsening of work security that took place between 2000 and 2007.

- The vast majority (80%) of ground staff affiliates reported increases in work-related stress cases.
- More than half (55%) reported increases in workplace accidents.
- More than two thirds (68%) reported increases in cases of musculoskeletal pains and other related problems.
- Over 60% reported increases in the occurrence of sleep disorders.

Based on the evidence revealed in this study, it is safe to conclude that occupational health and safety deteriorated significantly between 2000 and 2007 among all three occupational groups in the civil aviation industry worldwide. The adverse health outcomes linked with such conditions are strikingly visible from the findings. These are alarming results calling for immediate attention to improve worker health and safety. Potential adverse outcomes for the traveling public related to these results also should be given serious and immediate consideration.

## B. A MACRO MEASURE FOR WORK SECURITY

Work security is a complex but key element of social and economic security. As introduced in the sub-section above, *work security*<sup>38,39</sup> refers to working conditions that are safe and promote workers' health and well-being. Traditional occupational health and safety provisions protecting workers from occupational hazards, diseases, and injuries are a key component. Work security, however, goes beyond the traditional concept by considering these protections as a *fundamental right of all working people*. It is an inseparable component of basic social and economic security through the provision of:

- protection against accidents and illness at work through safety, health and environmental regulations;
- protection from discrimination based on work-related or other disabilities, gender, race, religion or ethnicity;

38 M Keith, J Brophy, P Kirby, E Rosskam, Barefoot Research: A Workers' manual for organising on work security, International Labor Office, Geneva, 2002.

39 P Annycke, F Bonnet, A Khan, J Figueiredo, E Rosskam, G Standing, L Zsoldos, Economic security for a better world, International Labor Office, Geneva, 2004.

- protection from violence, harassment, stress, unsociable hours; limits on hours of work, night work; limits on working age
- rights to employment and income security, compensation benefits, pension security, maternity protection, absenteeism protection, long-term care, holidays, reasonable work scheduling and work organization
- protection through legislation, enforcement, inspections
- right to association
- right to collective bargaining
- right to social supports such as access to health care, education, child care
- right to refuse unsafe work
- right to participate through mechanisms such as joint labour/management health and safety committees and other forms of voice representation
- right to know about work-related hazards
- right to protection for whistle-blowers.

Numerous questions were asked about work security in the surveys. To provide a picture of significant changes that have occurred globally between 2000 and 2007, impacting civil aviation workers, a work security 'macro' measure was developed uniquely for this study. The macro measure was constructed by combining the results for each individual work security question, for all three occupational groups together.

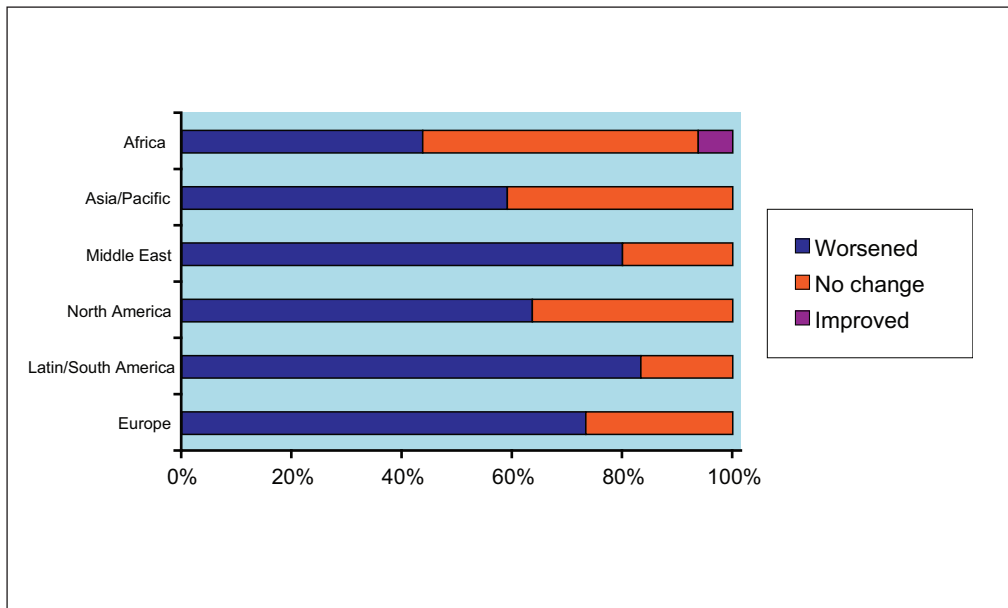
It presents a picture of change in work security, for each region, demonstrating whether work security became more *secure*, more *insecure*, or remained *unchanged* for civil aviation workers, between 2000 and 2007. The macro measure expresses the degree (or level) of work security, rather than the precise magnitude of change that occurred for the affiliates and their individual members represented in each occupational group.<sup>40</sup> The power of the results from this macro work security measure is in the overall trends (Figure 50).

Individual regional findings for the macro work security measure are presented below, for all three groups combined. Findings for each region cannot be compared with one another because the three occupational groups are combined, without showing individual results for each group.

<sup>40</sup> The work security macro was formed through a normalised, un-weighted mean (average) of the results from each individual question in the work security sections in the questionnaires. The values are normalised and abstract, limiting changes to be compared only on a relative scale. Thus one can, for example, assert statements of comparing regional work security levels with one another.



**Figure 50. Change in Work Security, by Region, All Groups, 2007**



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Source: SFS, n = 102

In Africa, nearly 45% of respondent affiliates reported that working conditions had deteriorated since 2000, while half of all respondents thought the conditions of work remained unchanged. Africa was the only region reporting any improvements in work security during the time period – 6% of its affiliates noticed positive change between 2000 and 2007, a negligible result given the starting point of poor working conditions in 2000.

In Asia/Pacific, nearly 60% reported that work security got worse and 41% claimed no real change in working conditions, again indicating stagnation in working conditions that were often already unacceptable.

In the Middle East, the vast majority (80%) of the surveyed affiliates reported that work security deteriorated since 2000, while 20% of respondents believed no real change had occurred.

In North America, nearly two-thirds (64%) of the surveyed affiliates reported that working conditions had become worse since 2000, while more than one-third (36%) believed there had been no real change in work security, meaning no improvement but no real deterioration in conditions either.

In Latin/South America, an overwhelming 83% of respondents reported regressive change in work security. 17% of affiliates said conditions had remained relatively unchanged.

Finally, in Europe, 73% of respondents reported that work security got progressively worse between 2000 and 2007, with 27% reporting no change in working conditions during the period.

**Key Points:**

A consistent pattern of a serious deterioration, worsening, weakening in work security among civil aviation workers has been revealed, in all regions of the world, between 2000 and 2007. These findings are alarming and affected all three of the occupational groups. Already in 2000, there was a great deal of work needed in the area of work security, for all civil aviation workers. Even reports of 'no change' would have been worrying in these findings, as conditions need to improve to such a great extent in all regions. Yet to have reports from all regions that work security *worsened* since 2000 deserves special attention. All regions except Africa reported worsening or unchanged working conditions between 2000 and 2007.

## SECTION IV: CABIN CREW

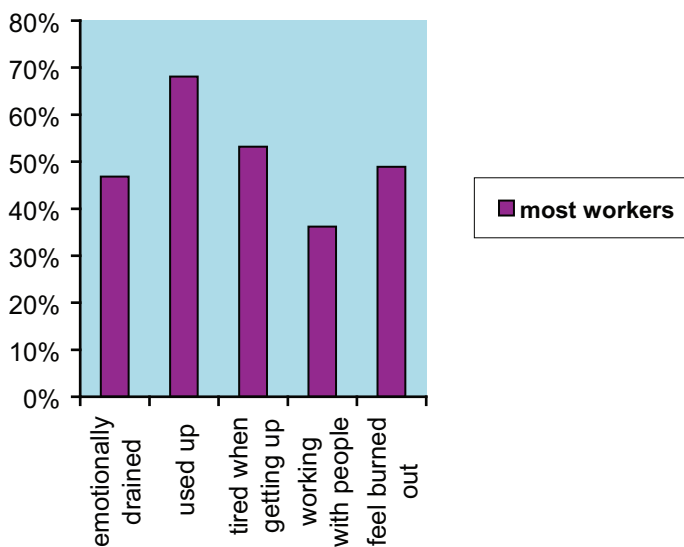
### Part I. Fatigue and Burnout

By the nature of their job cabin crew have specific job demands, which may put them at high risk of fatigue and burnout. Time demands, for example long and odd working hours, working irregular shift patterns, crossing time zones during work, and irregular rest break patterns all put a specific burden on the physical body and the social life of cabin crew.

The normal working day historically includes daytime work with rest at night, however this does not equate to the normal working day or work life of cabin crew. Overnight stays in hotels or outside the worker's own environment can impede sleep. Long haul flights overnight can have significant impacts on fatigue levels with the provision of, or ability to, nap or rest, reduced due to restricted cabin space and restricted rest time.

Figure 1 shows the percentages of the cabin crew representatives who reported that 'most workers' showed signs of fatigue and burnout. According to the results of the study, shown in Figure 1, reported levels of fatigue and burnout were very high among cabin crew workers. Nearly half of all affiliates reported that most cabin crew felt emotionally drained, and nearly 70% reported that most felt used up at the end of the workday.

**Figure 1: Fatigue and Burnout in Cabin Crew**

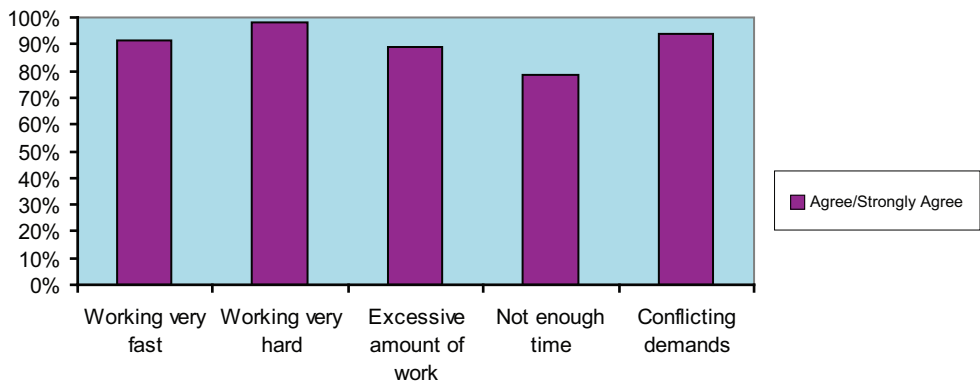


#### Work Demands

In assessing the level of work demands for cabin crew workers, such as whether the work of cabin crew requires them to work very fast or very hard, cabin crew affiliates reported overall high levels. The vast majority (92%) of affiliates agreed or strongly agreed with the statement that cabin crew had to work very fast, nearly all (98%) agreed or strongly agreed they had to work very hard, and nearly all (89%) believed that cabin crew had excessive amounts of work to do.

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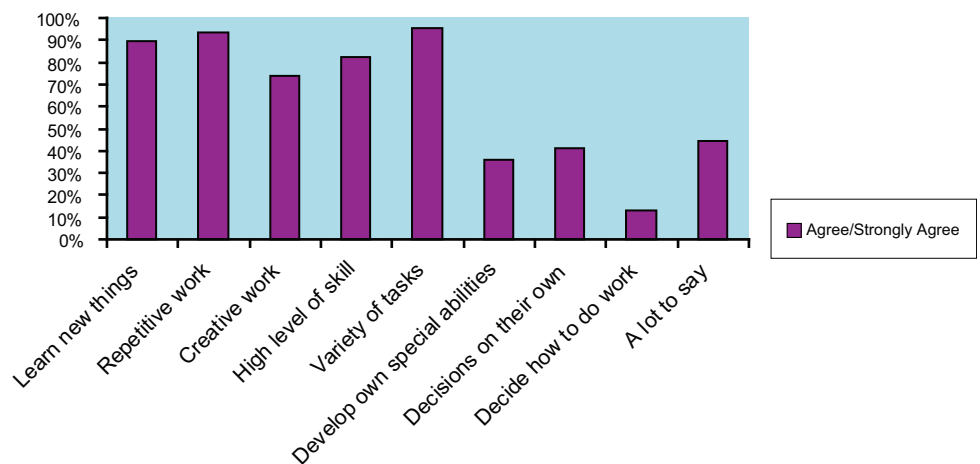
**Figure 2: Work Demands in Cabin Crew**



**JOB CONTROL**

Another set of questions in the survey addressed the level of control over working conditions, including the possibilities for making decisions and for applying or learning new skills.

**Figure 3: Job Control in Cabin Crew**

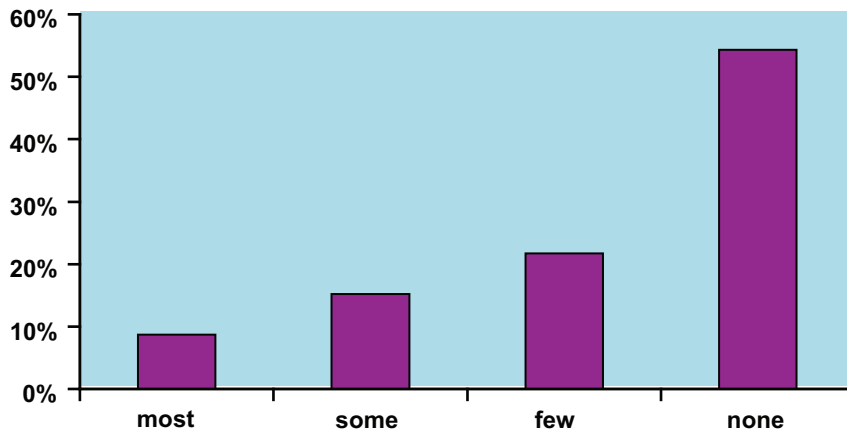


As shown in Figure 3, the union affiliates generally rated the opportunity for skill use ('learn new things', 'creative work', 'high level of skill') and the variety of tasks as high among cabin crew workers. In contrast the degree of ability to be in charge of one's own job (eg by making decisions) was rated as low to moderate. For example, only 13% of surveyed representatives agreed or strongly agreed that 'cabin crew have a lot of freedom to decide on how to do their work'. Representatives also estimated the level of repetitive work as high – nearly all (94%) agreed or strongly agreed that cabin crew's work involved a lot of repetitive work'.

## TIME ISSUES: SHIFT WORK PATTERNS

It is well known that shift work in general puts workers at heightened risk of fatigue. Rotating shift systems are known to be even more hazardous than regular shift patterns as the body rhythm cannot adapt to a regular time pattern. Figure 4 shows that over half of all union affiliates reported that in 2007 *no* (0%) cabin crew workers worked regular shifts. Such results clearly indicate a high risk of fatigue for cabin crew.

**Figure 4: Regular Shift Patterns in Cabin Crew in 2007**



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## TIME ISSUES: TURNAROUND TIME

The *turnaround time*, which is the time cabin crew have on the ground between de-planing passengers and boarding new passengers for the next flight, plays an important role in determining the workload for cabin crew workers. Due to increased competition in the aviation industry, turnaround time has become shorter in recent years, resulting in intensified work.

Affiliates were asked to indicate the actual minimum and maximum turnaround time between two flights. The results showed that the minimum turnaround time ranged from 20 to 90 minutes, with an average of 30 minutes, and the maximum turnaround time ranged from 20 minutes to 479 minutes, with an average of 60 minutes.

## TIME ISSUES: WORKING HOURS AND DAYS

Another crucial aspect of work factors contributing to fatigue affecting cabin crew workers is the length of time worked and recreation time available during night layovers in hotels. Research has shown that working long hours on a regular basis is not only associated with fatigue and exhaustion but also with serious physical illness, such as increased risk of heart attacks and stroke.

Union affiliates were asked to indicate the minimum and maximum number of duty days and flight hours cabin crew workers are scheduled to fly in a month.

**Table 1: Working Time in Cabin Crew**

	Minimum average	Maximum average
Scheduled flight hours/month	70	92
Scheduled duty days/month	15	22

Representatives reported that the average minimum number of *flight hours* per month that cabin crew were scheduled to fly was 70 hours; however affiliates reported that the minimum number of flight hours was as high as 176 hours per month. This equals almost nine hours per day at minimum, assuming a 20-day work month. The average maximum number of flight hours was 92 hours/month, with some workers flying up to 200 hours (10 hours per day, assuming a 20 day work month) as indicated by cabin crew affiliates.

On average, surveyed affiliates reported the minimum number of *duty days* that their members were scheduled to fly was 15 days per month. However the minimum days ranged from as little as five days per month to as many as 28 days/month. The average maximum duty days per month were 22 days. In some regions representatives reported that cabin crew could be scheduled up to 30 days per month.

Moreover, in assessing the number of hours cabin crew workers were required to fly per month between 2000 and 2007, the vast majority of affiliates (81%) reported that the required number of flight hours had increased for cabin crew workers between 2000 and 2007.

**TIME ISSUES: REST BREAKS AND RECREATION TIME**

Adequate rest breaks are crucial for preventing fatigue during working hours. However, in the course of long-haul flights only 38% of union affiliates reported that cabin crew workers had meal breaks scheduled by their carrier. For short-haul flights that percentage dropped to 22%. Additionally, 70% stated that scheduled or unscheduled rest breaks are never or rarely sufficient. The length of breaks seemed more sufficient in long-haul flights. One quarter of all respondents indicated that the breaks were never or rarely sufficient.

Union affiliates were also asked about the maximum number of consecutive days during which cabin crew were permitted to fly before they must be given a day of rest. The responses showed that on average cabin crew workers were permitted to work seven consecutive workdays. In some regions, surveyed affiliates for cabin crew workers reported their members being allowed one rest day following four days of work. In other regions their members worked up to 13 days consecutively without a day off.

Even though undisturbed relaxation time at the end of the work shift is of great importance, it becomes a challenge for cabin crew workers in lay over hotels due to what can be long travel times from airports to hotels, which ranged anywhere from 10 minutes to 240 minutes – that is, *four hours travel time one way*. For a more complete picture, union affiliates provided their estimates of the actual minimum and maximum amount of time for recreation and relaxation that cabin crew workers had at their layover hotel. The latter was determined on the basis of the time spent by cabin crew workers in their hotel room — from the time they close the door of their hotel room until the time they leave the room to report for duty. According to their estimates, the average minimum was eight hours, a period that allows for approximately 6.5 hours of sleep when one takes into account time to eat, bathe, dress/undress, etc.

**Table 2: Layover time for Cabin Crew as Reported by Affiliates**

	Average minimum	Average maximum
Minutes from arrival to layover hotel	38	109
Actual hours in hotel room	8	53

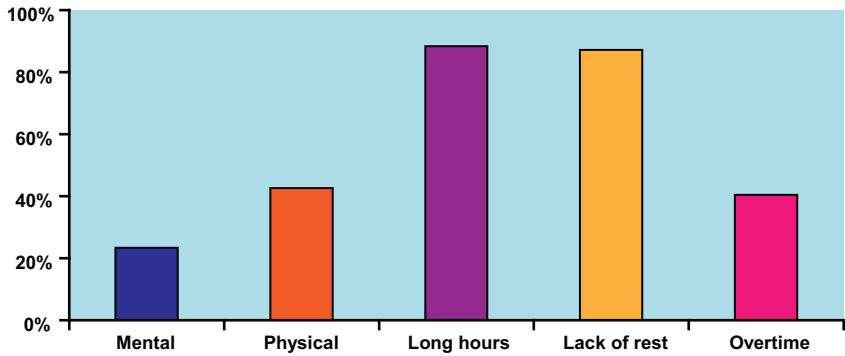
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At a regional level there was a significant difference between the minimum number of hours spent at a layover, with nearly all (90%) European cabin crew affiliates reporting less than the average minimum time in hotel rooms. All respondents from Latin/South America and Africa reported more than eight hours in the hotel room.

**JOB CHARACTERISTICS, FATIGUE AND BURNOUT: IS THERE A LINK?**

Affiliates were asked to indicate the main work factors that contributed to fatigue among cabin crew workers. Long/odd hours and lack of rest were mentioned by nearly all (90%) of the union representatives.

**Figure 5: Fatigue Factors in Cabin Crew**



**Table 3: Cabin Crew Concerns about Fatigue and Job Performance as reported by Union Affiliates**

How concerned are Cabin Crew about the possible effects of fatigue on their ability to:	% of those extremely concerned
Perform safety-related duties	64%
Recognise and react to potential security threats	62%
Interact with other crew members	30%
Provide service to passengers	31%
Commute to/from home or hotel and airport	36%

## FATIGUE AND SAFETY

Cabin crew representatives were asked to estimate whether or not staff were concerned about the effects of fatigue on their ability to appropriately conduct safety and passenger-related duties. The findings shown in the table above are alarming. Indeed, the findings presented implicit negative implications for worker, public and passenger safety, and would imply the potential for increased risks of accidents.

- More than 60% of cabin crew affiliates reported that their members were extremely concerned that fatigue would affect both the performance of safety-related duties as well as their recognition of and reaction to potential security threats.
- Nearly all (95%) cabin crew representatives who identified long hours as a fatigue factor also reported that cabin crew workers were concerned about their ability to 'perform safety-related duties'. Notably, that association was statistically significant. Their views were similar when it came to fatigue caused by long hours and the ability of cabin crew personnel to 'recognise and react to potential safety threats'.
- 30% of affiliates said that cabin crew were 'extremely concerned about how fatigue affects their ability to interact with other crew members', and nearly two thirds (60%) reported that cabin crew were 'somewhat concerned' about this.
- Almost half of those who responded on behalf of cabin crew said that their members were 'somewhat concerned' and over a third were 'extremely concerned' about the effect of fatigue on 'service to passengers'

A highly significant statistical relationship was found between what cabin crew representatives said about the ability of cabin crew workers to interact amongst each other and what they said about concerns over the performance of safety-related duties. Accordingly, one could conclude that cabin crew workers who fail to interact with each other sufficiently also pay less — than representatives think they should — attention to safety. It therefore follows that any threats to the ability of cabin crew personnel to interact with each other should be taken seriously because such threats could reduce their attention to safety.

A copious body of science demonstrates that workers cannot be at their top level of performance when affected by extreme fatigue or chronic stress.<sup>41</sup> At the ITF's 2008 International Conference, cabin crew delegates from various regions reported that their members were not able to perform according to their training or at their top level of performance, in particular due to the effects of chronic fatigue, but also due to chronic stress. Those delegates representing cabin crew expressed concern that the effects of chronic fatigue could compromise cabin crew ability to ensure passenger safety and safe evacuation of all passengers under any conditions. In a separate ITF forum in 2007, some cabin crew representatives stated that their training was sufficient so that even response by reflex, no matter how fatigued, meant they would ensure safety for all passengers and safe evacuation of all if required. Those representatives said that cabin crew were able to work on 'auto pilot'.

<sup>41</sup> See for example Swaen, GMH, van Amelsvoort, LGPM, Bültmann, U and Kant, IJ (2003). Fatigue as a risk factor for being injured in an occupational accident: results from the Maastricht Cohort Study, *Occupational Environmental Medicine* 60: i88-i92.



## INTIMIDATION BY MANAGEMENT

Many respondents from all three occupational groups reported increases in the number of complaints made to their unions about 'intimidation by management' between 2000 and 2007; cabin crew suffered slightly greater levels of intimidation than the other two groups. Two thirds of cabin crew affiliates reported that the number of official complaints made to their unions about 'intimidation by management' had increased between 2000 and 2007. Most cabin crew respondents portrayed the management as *not* 'listening', *not* offering 'respect', *not* 'paying attention to what workers are saying' *nor* 'offering support'. It is possible that unsympathetic managers and supervisors might actually induce greater solidarity among cabin crew workers, thus, improving workers' ability to 'interact with each other'.

**Table 4: The Percentage of Representatives of Cabin Crew Critical about their Supervisors**

	<b>Cabin Crew</b>
'Supervisors are concerned about welfare of subordinates?'	55% disagree
'Supervisors pay attention to what workers are saying?'	61% disagree
'Supervisors are helpful in getting the job done?'	38% disagree

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## ABSENTEEISM

Absenteeism may be the most worrying indicator of the costs to workers affected by work-induced stress and fatigue. The vast majority (85%) of union representatives answering on behalf of cabin crew workers reported that absenteeism had increased in this group between 2000 and 2007. Cabin crew were considerably affected by increased work pressure between 2000 and 2007. Absenteeism may have resulted from cabin crew being too depleted or demoralised to work, and who would find themselves interacting less well with each other.

## COMPLAINTS MADE BY CABIN CREW

One way of seeing where working conditions have deteriorated the most is to examine reports of increased complaints by union members representing cabin crew. Listed below are the percentages of respondents who reported increases in cabin crew complaints between 2000 and 2007, and what those complaints were about:

- 91% changes to working methods
- 91% rest periods between duties
- 89% poor morale or sense of well-being
- 85% cuts in staffing levels
- 85% unwanted shift patterns
- 80% unmanageable workloads
- 76% verbal abuse from passengers
- 70% disciplinary charges brought by management
- 70% inappropriate demands and expectations of passengers
- 68% training standards

Complaints provide clues about workers' morale. This matters because workers with poor morale are not best placed to undertake appropriate and effective emotional labour, interact with each other and perform safety duties.

Comparing all three groups of workers, reported increases in complaints were highest among workers who undertake the greatest amount of emotional labour, which are cabin crew. The vast majority (83%) of cabin crew representatives reported an 'increase in the number of official complaints filed with the union' between 2000 and 2007, and this was by far the highest proportion of respondents from all three groups reporting this increase.

The highest percentage of representatives who reported increases in the number of complaints filed about verbal and physical abuse between 2000 and 2007 came from cabin crew affiliates: 78% recorded an increase in complaints filed over verbal abuse by passengers, and 57% an increase in complaints filed over physical assaults by passengers.

#### **Key Points:**

Nearly two-thirds of respondents reported that their members felt that fatigue would affect both the performance of safety-related duties by cabin crew workers as well as their recognition of and reaction to potential security threats.

Reported levels of fatigue and burnout were very high amongst cabin crew workers. Nearly half of all affiliates reported that most cabin crew felt emotionally drained, and nearly 70% reported that most felt used up at the end of the workday.

Most affiliates reported that cabin crew had little freedom to decide on how to do their work.

More than half of all respondents reported that in 2007 *no* cabin crew workers worked regular shifts. These findings indicated a high risk of fatigue for cabin crew.

The vast majority of affiliates reported that the required number of flight hours had increased for cabin crew workers between 2000 and 2007.

Cabin crew spent up to four hours travelling one way between airport and hotel, leaving them with significantly reduced 'relaxation time at the end of the work shift' and reduced time for sleep. The pattern of long hours of work combined with insufficient time for rest and sleep clearly contributes to fatigue, and has potential serious safety implications related to sleep deprivation and alertness on the job.

Cabin crew averaged only 6.5 hours of sleep per night during layovers between flights.

**Part 2. Effort-Reward Imbalance**

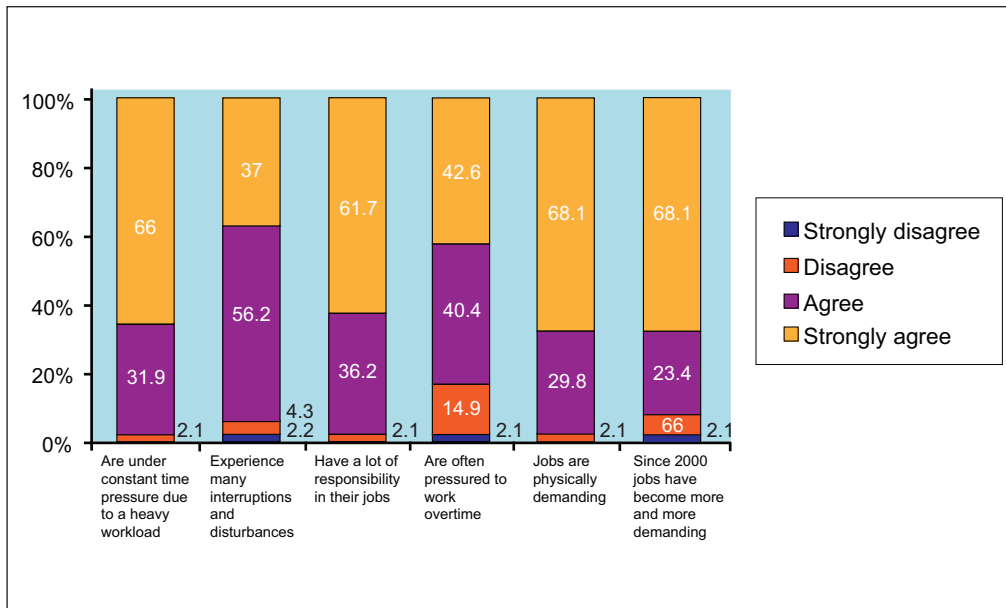
**EFFORT AT WORK**

To determine how reports of individual and combined aspects of work stress were distributed among cabin crew affiliates, responses to individual questions that form the main component of the effort scale were examined. These include: 'being under constant time pressure due to heavy workload', 'experiencing on-going interruptions and disturbances', 'high level of responsibility at work', 'being pressured to work overtime', 'having a physically demanding job' and 'experiencing an increase in job demands since 2000'.

As depicted in Figure 6, almost all union affiliates agreed or strongly agreed to the statement that cabin crew workers were under constant time pressure due to heavy workload. Additionally, the vast majority (over 90%) strongly agreed or agreed that cabin crew personnel experienced many interruptions and disturbances. Notably, nearly 100% of respondents strongly agreed or agreed that cabin crew workers had a lot of job responsibilities. The majority of union affiliates reported that the job of a cabin crew worker was physically demanding and since 2000 had become progressively demanding. To summarise, the majority of the union representatives indicated that cabin crew had a physically demanding job with many responsibilities and experienced many interruptions and disturbances while on the job. Moreover, according to most surveyed affiliates, the job of cabin crew workers became increasingly demanding between 2000 and 2007.

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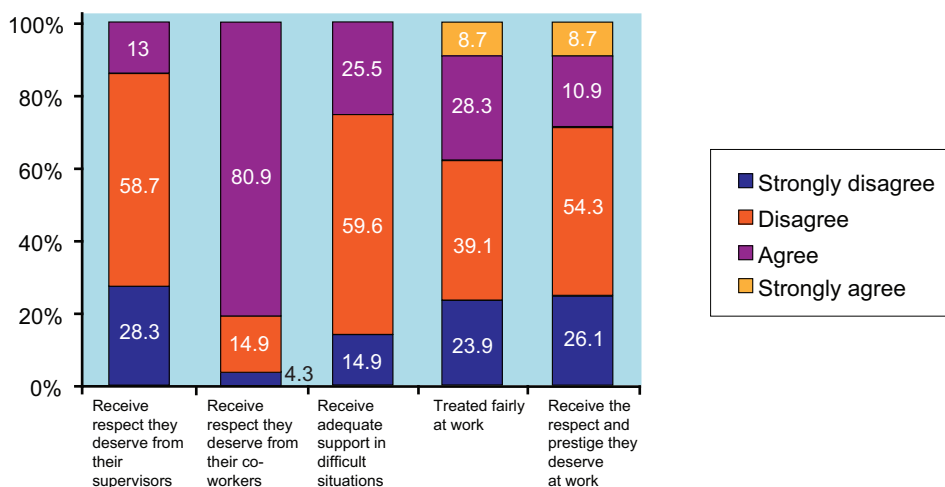
**Figure 6: Effort Items among Cabin Crew**



### REWARDS AT WORK: SENSE OF ESTEEM

The reward scale has three main components, which are: ‘esteem’, ‘job security’ and ‘job promotion/salary’. Figure 7 displays individual esteem reward items, including ‘respect of supervisors and colleagues’, ‘adequate support in difficult situations’, ‘respect and prestige deserved at work’ and ‘fairness’. Cabin crew representatives reported that the majority of their members were not treated with adequate respect by their supervisors. Only one quarter of union affiliates indicated that their members received adequate support in difficult situations. Moreover, nearly two thirds suggested that cabin crew had been treated unfairly at work. Despite all efforts and achievements by cabin crew, fewer than 20% of respondents reported that cabin crew workers received the respect and prestige they deserved.

**Figure 7: Esteem Items Among Cabin Crew**



### REWARDS AT WORK: SENSE OF JOB SECURITY, PROSPECTS FOR PROMOTION, SALARY

Concerning job security, the second aspect of reward at work, the vast majority (90%) of union affiliates indicated that cabin crew had experienced or expected to experience an undesirable change in their work situation. Moreover, almost two thirds of representatives agreed that job security for cabin crew workers was poor. Similarly, with regard to job promotion and salary, the majority of respondents reported poor prospects for promotion or the prospect of job security for cabin crew workers despite all their efforts and achievements. A mere 32% agreed that the occupational position of cabin crew personnel adequately reflected their education and training. And few respondents said that cabin crew salaries/incomes were adequate.

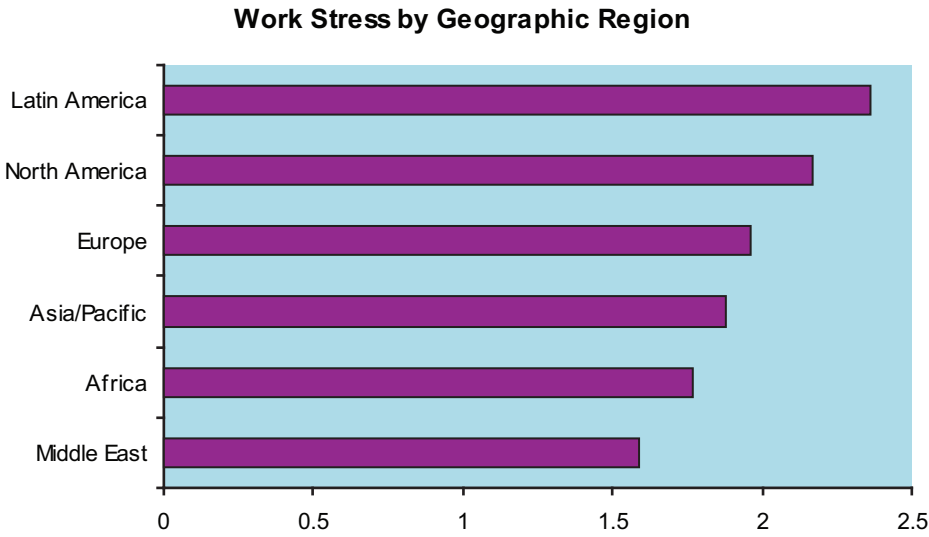
### REGIONAL DIFFERENCES IN STRESS FROM IMBALANCES BETWEEN EFFORTS AND REWARDS

The differences in stress levels, as measured by the degree of imbalance between efforts and rewards among cabin crew workers in different geographic areas were examined. Figures 8 and 9 display the mean (average) levels of work stress in terms of effort-reward imbalance amongst cabin crew differentiated by six regions: Latin America, North America, Europe, Asia/Pacific, Africa, and the Middle East.

Affiliates in Latin America were the largest group reporting stress caused by effort-reward imbalance, followed by respondents in North America and Europe. Reports from Africa and the Middle East indicated relatively low levels of work stress. Figure 8 provides the summary of the findings. These results are further illustrated by the subcomponents ‘effort’ and ‘reward’ in Figure 9 and the three aspects of occupational rewards shown in Figure 10. Regional differences concerning effort at work were weaker than regional differences concerning occupational

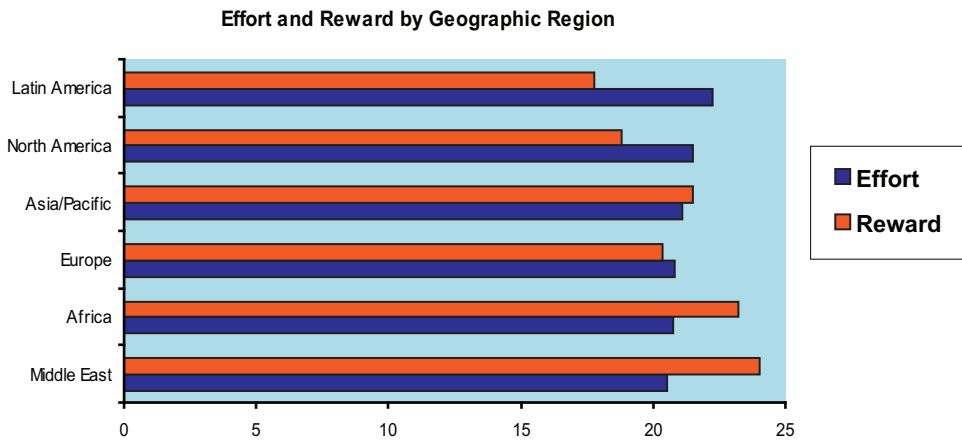
rewards, as shown in Figure 9. Regional differences with regard to job security and esteem were more pronounced than the regional differences with regard to job promotion/salary, as shown in Figure 10.

**Figure 8: Mean (average) Values of the Effort-Reward Ratio, by Geographic Regions (the higher the bar, the higher work stress; range of the effort-reward ratio varies from 0.25 to 4.0).**



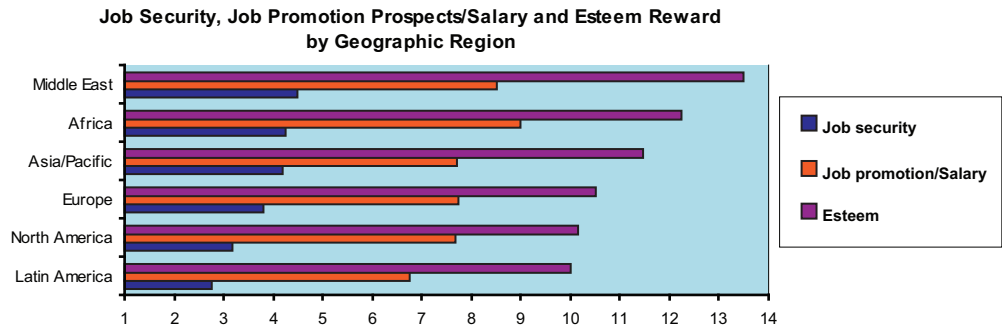
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**Figure 9: Mean (average) Values of the Effort and Reward Scales by Geographic Regions. The higher the bar, the higher effort and reward, respectively (range of the effort scale varies from 6.0 to 24.0, reward scale – 11.0 to 44.0).**



**Figure 10: Mean (average) Values of the Effort Subscales, by Geographic Regions (range of the job security scale varies from 2.0 to 8.0, job promotion scale – 4.0 to 16.0, esteem reward scale – 5.0 to 20.0).**

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**WORK STRESS AND EMOTIONAL EXHAUSTION**

Emotional exhaustion increases according to the level of work stress, where a higher level of emotional exhaustion occurs amongst those with a high level of stress experienced at work. The findings for cabin crew revealed a statistically significant association between exhaustion and lack of occupational rewards. The severe imbalance between effort at work and occupational rewards among cabin crew workers resulted in a high level of work stress and a high level of emotional fatigue.

**Key Points:**

- Alarmingly, close to 100% of all cabin crew affiliates reported that cabin crew were under constant time pressure due to heavy workload, and that this had increased between 2000 and 2007.
- The majority of the representatives indicated that cabin crew experienced many interruptions and disturbances, had a lot of responsibility on their job, that the job was physically demanding, and that between 2000 and 2007 their jobs had become increasingly demanding.
- Representatives of cabin crew reported that between 2000 and 2007, cabin crew did not receive the respect they deserved from supervisors, only one quarter of affiliates said that cabin crew received adequate support in difficult situations, and cabin crew did not receive the respect and prestige they deserve given all of their efforts and achievements.
- Cabin crew in Latin America reported the highest amount of stress at work caused by high effort with low rewards.

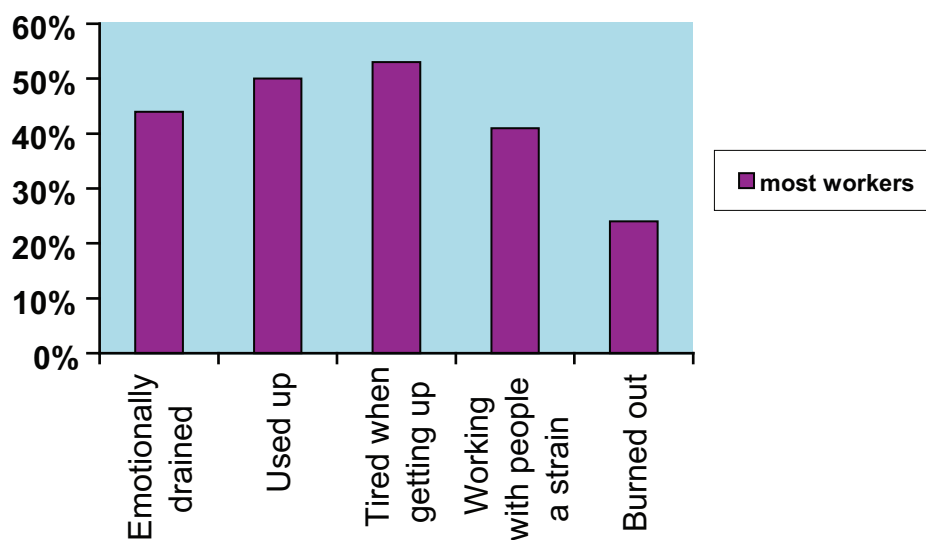
## SECTION V: GROUND STAFF

### Part I. Fatigue and Burnout

Existing scientific studies affirm the link between continuous work at a fast pace (high job demands) with no opportunities for individual influence over one's work (low control) and/or opportunities to apply or learn skills and fatigue and burnout. Specifically, working with people and providing direct service to customers, as many ground staff workers do, is likely to lead to the 'burnout syndrome'. Moreover, working shift, long and odd hours and working extensive hours are also known contributors to fatigue and burnout. As the aviation industry suffered from increased competition and growing security demands in the past few years, the study specifically investigated changes in these temporal factors of work from 2000 and 2007. Apart from various job characteristics, job demands, job control and temporal issues the study questions also addressed the level of social support available to ground staff workers. More specifically, the questionnaire asked affiliates to either 'strongly agree', 'agree', 'disagree' or 'strongly disagree' with statements assessing job demands, control or decision latitude and social support. As shown in numerous scientific studies, support from supervisors and co-workers may buffer against the adverse health effects of stressful work.

Ground staff personnel are a diverse group, performing computer work, manual handling tasks, cleaning duties, working as mechanics, security workers, and performing service work directly dealing with customers, to name just a few of their jobs. To assess the magnitude of burnout and fatigue amongst ground staff workers, union affiliates were asked to indicate whether 'most', 'some', 'very few' or 'none' of ground staff showed signs of fatigue and burnout since 2000. Figure 1 shows how many of surveyed affiliates observed most ground staff workers suffering from various aspects of fatigue and burnout since 2000.

Figure 1: Fatigue and Burnout in Ground Staff



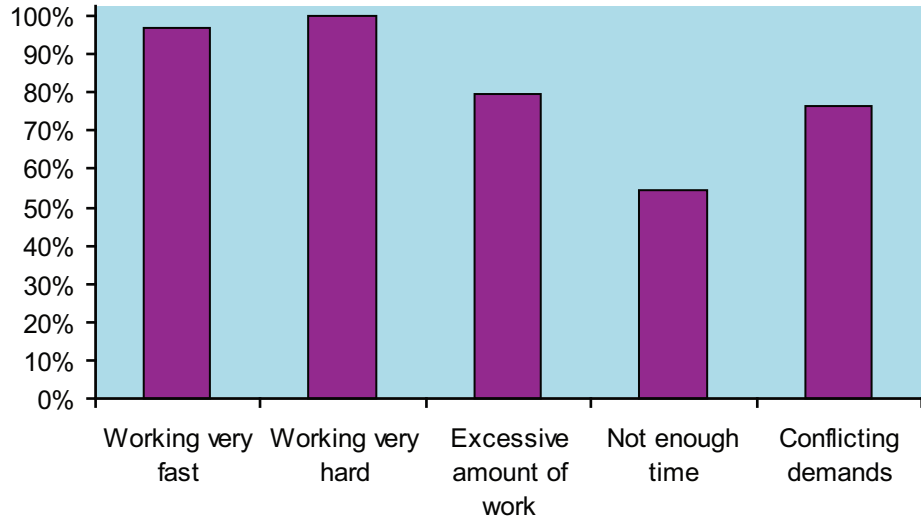
Generally, representatives of ground staff reported a high magnitude of fatigue and burnout. For example, over 44% indicated that 'most' workers felt emotionally drained from their work, while half said that 'most' workers felt used up at the end of the day. Moreover, over half of surveyed affiliates indicated that 'most' ground staff workers felt tired when getting up in the morning, a possible indicator of chronic fatigue. Over 40% of surveyed affiliates for ground staff agreed that working with people was a strain for most ground staff, and one quarter agreed that most members felt burned out from work.

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## WORK DEMANDS

The results of the study revealed that union affiliates indicated high levels of job demands for ground staff workers. For instance, 97% and 100% of the representatives respectively 'strongly agreed' or 'agreed' that ground staff personnel had to work fast and hard. Moreover, the vast majority (79%) 'strongly agreed' or 'agreed' with the assertion that ground staff workers were routinely asked to perform an excessive amount of work. In addition, just over half of union affiliates (55%) reported their members as having an inadequate time frame to perform their assigned work.

**Figure 2: Work Demands among Ground Staff**



## JOB CONTROL

In general, questions related to decision making at work and use of skills and abilities received positive feedback, with 97% and 88% of union affiliates representing ground staff suggesting there were opportunities to learn new things and that their jobs provided some variation in tasks. However nearly all (94%) ground staff affiliates 'strongly agreed' or 'agreed' with the following statement: 'This type of job requires a lot of repetitive work.'

## SUPPORT BY SUPERVISORS AND CO-WORKERS

Ground staff representatives reported generally low levels of supervisory support. For example, only 32% of union affiliates 'strongly agreed' or 'agreed' with the statement that 'Supervisors are concerned about the welfare of subordinates'. This is an important finding, as supervisor support is an essential buffer against the stressful effects of working conditions, which was found to be not evident in this worker population.

By contrast, the ratings for co-worker support were much higher. For example, 91% of representatives reported that 'workers were friendly to each other', while 88% felt that workers were helpful to each other. The high level of social support by co-workers may be in part a result of the low supervisor support levels found.



## *TIME ISSUES: SHIFT WORK PATTERNS*

The study found dramatic changes in regular shift patterns among ground staff between 2000 and 2007 as reported by their union affiliates. Indeed, representatives for ground staff indicated a significant decrease in regular shift patterns. One quarter of representatives reported that in 2000 most ground staff worked a regular shift pattern. In dramatic contrast, only 10% said that most ground staff worked regular shift patterns in 2007. Ground staff affiliates reported that ramp workers, in particular, were most affected by the changes – one quarter of affiliates reported that most ramp workers worked regular shift patterns in 2000, while only 4% said that most ramp workers worked regular shift patterns in 2007. Although research conducted in other industries has suggested that workers with regular shift patterns are less likely to be burned out from work, this investigation did not reveal any marked differences in the level of any of the three indicators for burnout (emotional exhaustion, cynicism towards work or professional accomplishment) in ground staff workers with and without regular shift patterns. Notwithstanding, these findings deserve serious attention given the extremely high safety-sensitive jobs of ramp workers, and the implications for public safety. Irregular shift work patterns cause fatigue and fatigue impacts on alertness and performance on the job.

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## *TIME ISSUES: REST BREAKS AND RECREATION TIME*

Regular rest breaks are necessary to recuperate from strenuous work and to prevent fatigue. Civil aviation workers, however, are not always able to take rest breaks due to heavy workload, unforeseen events, or simply due to ineffective work organization. For example, between 2000 and 2007, representatives for ground staff workers reported a decrease in workers' overall guaranteed rest breaks. 85% of ground staff affiliates said rest breaks existed in 2000 while this decreased to 82% reporting that rest breaks existed in 2007. Notably, the responses of representatives indicated that check-in workers were most affected by this reduction (90% said that guaranteed rest breaks existed in 2000 while 80% said rest breaks existed by 2007).

## *JOB CHARACTERISTICS, FATIGUE AND BURNOUT: IS THERE A LINK?*

Union affiliates were asked to single out specific work characteristics that, in their opinion, contributed most to fatigue among ground staff. Notably, physical work and long/odd hours were the workplace factors most universally reported as main contributors to fatigue. More specifically, physical work emerged as the main contributor to fatigue among baggage handlers, catering workers, cleaners and ramp workers, while long and odds hours caused most fatigue amongst security workers. Additionally, lack of rest appeared as another important factor leading to fatigue among ground staff personnel, especially amongst baggage handlers. Meanwhile, mental work was rated as the least critical contributor to fatigue.

## INTIMIDATION BY MANAGEMENT

The great majority of ITF representatives reported that ‘pressure to complete work tasks’ had increased for ground staff. Where was that pressure coming from? 56% of ground staff representatives reported an increase in the number of complaints made to ITF-affiliated unions about ‘intimidation by management’. Notably, large percentages of those answering the survey had a low opinion of supervisors. In fact, ground staff supervisors were deemed particularly unsympathetic and ineffective. The following is a snapshot review of how ground staff representatives assessed supervisors over a range of issues:

**Table 1: The Percentage of Representatives of Ground Staff who were Critical about their Supervisors**

	Ground Staff
‘Supervisors are concerned about welfare of subordinates?’	68% disagree
‘Supervisors pay attention to what workers are saying?’	61% disagree
‘Supervisors are helpful in getting the job done?’	47% disagree

## ABSENTEEISM

Absenteeism is widely considered as possibly the most worrying indicator of the costs to workers concerned. No fewer than three quarters (74%) of representatives answering on behalf of ground staff reported that absenteeism had increased among ground staff between 2000 and 2007, with the highest jump in absenteeism noted amongst check-in workers.

## COMPLAINTS MADE BY GROUND STAFF

One way of determining where working conditions have deteriorated the most is to compare reports of increased complaints by union members representing ground staff. Complaints provide clues about workers’ morale. This matters because workers with poor morale are not best placed to undertake appropriate and effective emotional labour, interact with each other and perform safety duties. Listed below are the percentage of representatives who reported increased ground staff complaints since 2000 and what they were about:

- 82% poor morale or sense of well-being
- 76% unwanted shift patterns
- 58% cuts in staffing levels
- 62% unmanageable workloads
- 59% inappropriate demands and expectations of passengers
- 56% intimidation by management
- 56% rest periods between duty periods and shifts
- 56% disciplinary charges brought by management
- 56% verbal abuse from passengers
- 53% inappropriate changes to working methods.

As these results revealed, typically 50 to 60% of representatives of ground staff reported 'changes in official complaints to the union' between 2000 and 2007. Ground staff affiliates also reported that between 2000 and 2007 there was an increase in the number of complaints filed about verbal abuse (reported by 59% of affiliates) and about physical abuse (reported by 34% of representatives).

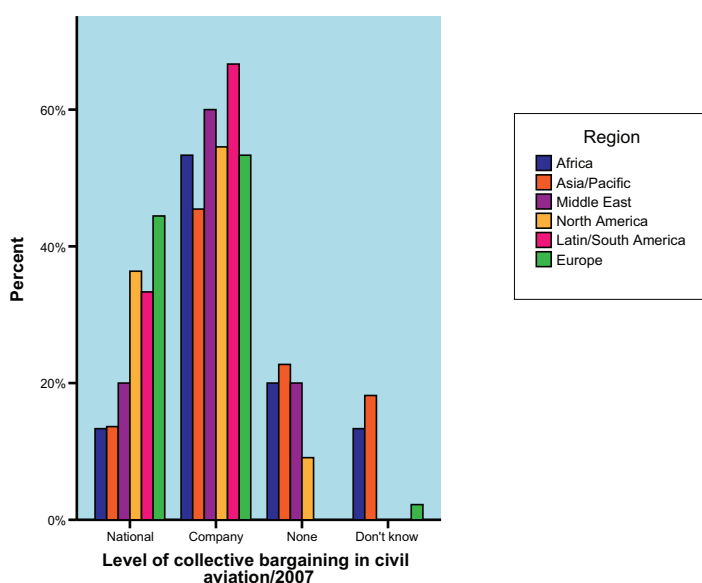
### COLLECTIVE BARGAINING AND GROUND STAFF

Ground staff workers perform many extremely safety-sensitive jobs. Many ground staff workers are directly exposed to the public all day, every day and many perform jobs that have a direct cause and effect relationship on public safety. Because such a high percentage of ground staff affiliates (nearly two thirds), in all regions, reported the greatest amount of change in legislation between 2000 and 2007 that made it easier for employers to use temporary labour, this issue was examined more closely.

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An examination of the collective bargaining agreements to which ground staff in the civil aviation industry had access revealed a slight increase in the existence of company collective bargaining, from 14% in 2000 to 16% in 2007 as reported by representatives. In regional terms, Europe had the highest number of national bargaining agreements, as reported by 44% of ground staff union affiliates. Thus, among the three occupational groups, during 2000 and 2007, changes occurred which left ground staff workers faced with increasingly precarious conditions of work. National collective bargaining legislation is much more desirable and protective compared to company level agreements, yet during the time period, for ground staff, there was a growth in company level collective bargaining agreements.

Figure 3: Collective Bargaining, by Regions



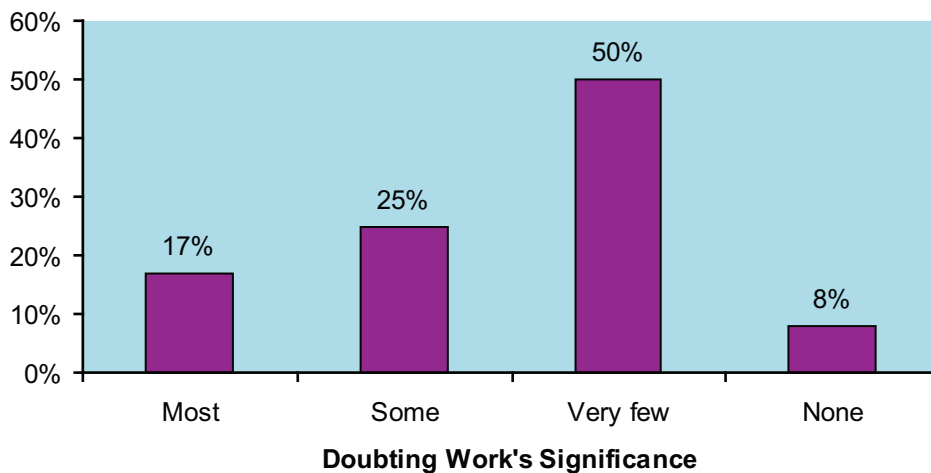
Nearly 60% of ground staff affiliates reported that workers in countries with access to national collective bargaining agreements either did not doubt or few of them doubted the significance of their work (Figure 4). One cannot interpret this finding to mean that the existence of national collective bargaining agreements directly increases the level of importance that ground staff workers give to their jobs. However, the evidence did appear to reveal that workers in countries with national collective bargaining agreements were more likely to recognise the importance of their work than workers in countries without national bargaining agreements.

These findings beg any number of questions. When machinists, or ramp workers, or security workers are used as temporary labour, when they lack employment security and live with chronic stress, fear, and the insecurity that comes with a short-term employment contracts are they able to perform at the top level of ability every day? Check-in workers are the front line workers, the first to come into direct contact with passengers. Experienced check-in workers are well placed to identify potentially unruly or dangerous passengers, and it goes without saying that it is preferable to identify and deal with such people on the ground – well before they get onto an aircraft, where the situation becomes one of a completely different context. When check-in workers are increasingly treated as a commodity to be exchanged, rather than seen as skilled workers, how much importance are they likely to give to their jobs?

The same question should be asked with regard to security workers, ramp workers, and machinists, in particular. How motivated can a worker feel on the job when they are constantly mentally preoccupied with their income and employment insecurity, the labour market conditions they will have to face when their contract comes to an end? Are they able to be at their top level of performance every day on the job under such conditions? This report has presented evidence demonstrating that such conditions of work and life are associated with chronic stress and fatigue, and have very real potential implications for the development of chronic diseases.

The significant reports – from affiliates around the world – of concerns for passenger safety and security due to cabin crew fatigue have been described. But policy-makers should consider similar questions with regard to machinists, security workers, ramp workers, and check-in workers in particular. Could the chronic stress that machinists live with due to a precarious work situation and no access to collective bargaining ultimately result in an error that could cost the lives of hundreds? Since 11th September 2001, the traveling public relies more than ever before on the vigilance and attentiveness of airport security workers. Is it realistic to expect security workers to be able to perform at their top most level of vigilance, during every work shift, every day, when they are living with chronic insecurity about the next month's pay, mentally preoccupied with what happens when their six-month employment contract ends?

**Figure 4: Significance of Work for Ground Staff**



Were any accidents, crashes, near misses, terrorist threats, mechanical errors on aircrafts, or other incidents between 2000 and 2007 related to the fact that ground staff workers increasingly faced downsizing, outsourcing, and generally precarious situations, and the stress and mental preoccupation that comes with such realities? The lack of access to collective bargaining adds significantly to the insecurity of such workers' already precarious situations. Doubting the significance of one's work is an important expression of how one feels about it, directly related to the degree of importance one may attach to the job. The implications would appear to speak for themselves.

If public safety is truly of primordial concern, then policy-makers should give attention to the conditions of ground staff (as well as cabin crew and air traffic service workers), to ensure that their conditions facilitate their top level of performance at all times. The changes in legislation that took place between 2000 and 2007 which made it easier for employers to make ground staff temporary, precarious short-term contract workers, are in the direct opposite interests of public safety and security.

#### Key Points:

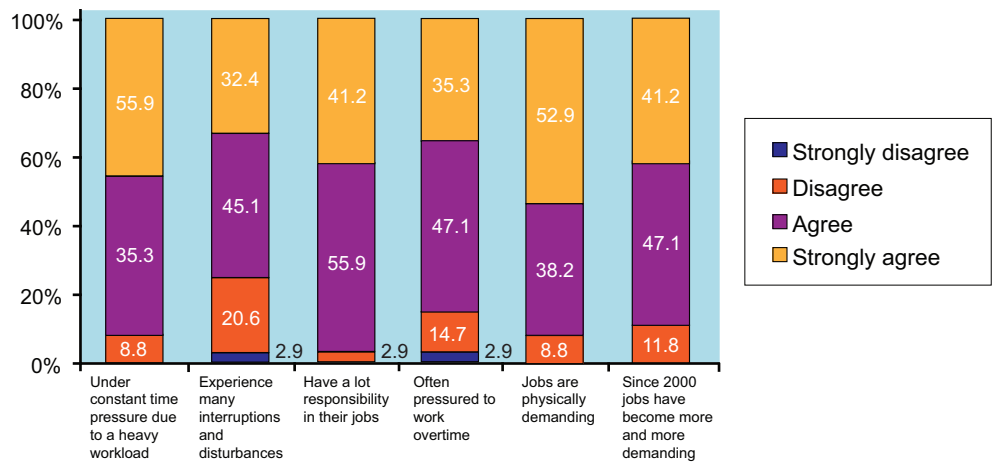
- Experiencing greater fatigue and burnout, ground staff felt emotionally drained from their work and used up at the end of the working day.
- Physical work and long/odd hours were the workplace factors most universally reported as main contributors to fatigue, in addition to lack of rest.
- Since 2000, ground staff workers have been subjected to increasing job demands, with 97% and 100% of union affiliates 'strongly agreeing' or 'agreeing' that ground staff personnel had to work fast and hard, respectively.
- Ground staff experienced generally low levels of supervisory support as opposed to co-worker support, with only 32% of surveyed representatives strongly agreeing or agreeing with the statement that 'Supervisors are concerned about the welfare of subordinates'.
- Between 2000 and 2007, ground staff affiliates saw a significant drop in regular shift patterns, where 25% reported these existed in 2000 but only 10% reported these existed in 2007.
- Over half of ground staff representatives reported an increase in the number of complaints made to ITF-affiliated unions about 'intimidation by management' between 2000 and 2007 in addition to a generally low opinion of ground staff supervisors, who were deemed particularly unsympathetic and ineffective.
- Among ground Staff representatives, increases in the number of complaints filed about verbal and physical abuse since 2000 were reported by 60% and 34% of representatives, respectively.
- No fewer than 74% of representatives answering on behalf of ground staff reported that absenteeism had increased amongst ground staff since 2000.
- Ground staff workers in countries with national collective bargaining agreements were more likely to recognise the importance of their work than workers in countries without national bargaining agreements. Implications for public safety and security warrant serious attention.

## Part 2. Effort-Reward Imbalance

### EFFORT AT WORK

Among ground staff representatives, nearly all (90%) reported that ground staff workers were under constant time pressure due to a heavy workload; the vast majority (78%) stated that their members were interrupted and disturbed by work; nearly 100% indicated that the job of ground staff personnel involved a lot of responsibility; 83% suggested ground staff workers were often pressured to work overtime; 91% reported that the job of ground staff was physically demanding; and 88% asserted that since 2000, ground staff jobs had become increasingly demanding.

**Figure 5: Effort Items among Ground Staff**

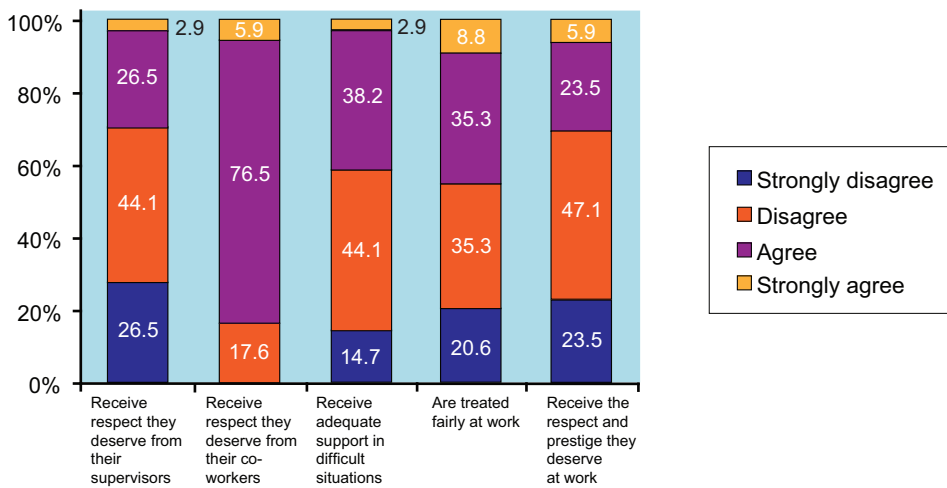


### REWARDS AT WORK: SENSE OF ESTEEM

Figure 6 displays esteem reward items for ground staff. More than two thirds (71%) of surveyed affiliates disagreed or strongly disagreed that ground staff received respect they deserved from their supervisors. Moreover, 59% disagreed and strongly disagreed that ground staff received adequate support in difficult situations. Additionally, 56% of union affiliates thought that ground staff workers were treated unfairly at work and only 29% reported that ground staff received the respect and prestige they deserved at work. At the same time, the majority of the ground staff representatives indicated that their members received adequate respect from co-workers.

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**Figure 6: Esteem Items among Ground Staff**



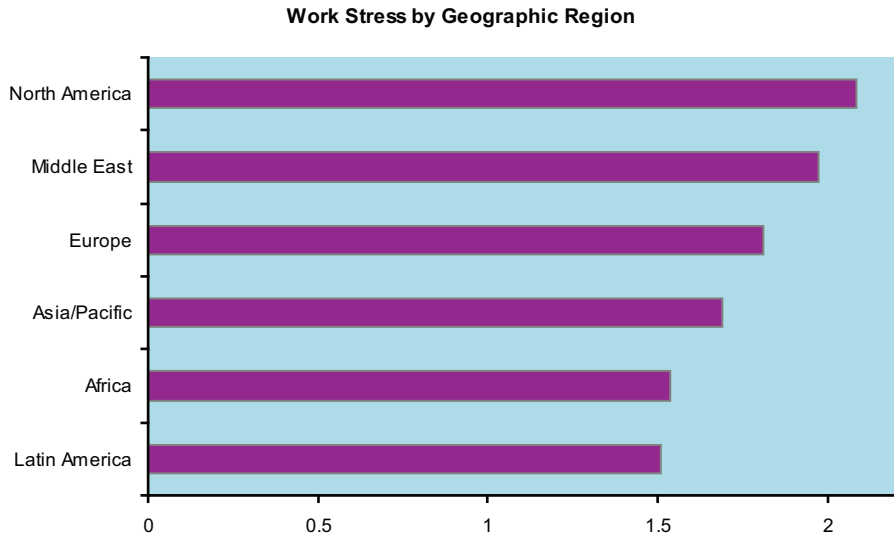
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**REWARDS AT WORK: SENSE OF JOB SECURITY, PROSPECTS FOR PROMOTION, SALARY**

The majority of surveyed representatives reported that ground staff had experienced or expected to experience an undesirable change in their work situation. Moreover, employment security for ground staff was deemed poor. The salary/income of ground staff was not adequate considering all their efforts and achievements. The majority of representatives indicated that prospects for promotion or the prospect of job security for ground staff were poor, and workers' current occupational position did not adequately reflect their education and training.

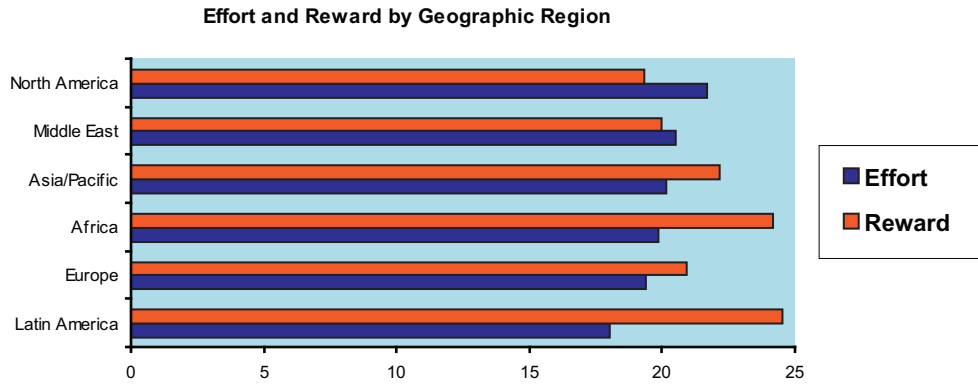
Figures 7 to 9 display findings for ground staff where regional differences were highly visible. Importantly, as Figure 7 shows, work stress was most frequently reported by ground staff affiliates in North America, the Middle East and Europe. Notably, fewer reports of work stress from affiliates in Africa and Latin America could be explained by high levels of occupational rewards and, as indicated in Figure 8, particularly high esteem reward. Among ground staff representatives in North America, job security was lower than in all other regions.

**Figure 7: Mean (average) Values of the Effort-Reward Ratio, by Geographic Regions (the higher the bar, the higher work stress; range of the effort-reward ratio varies from 0.25 to 4.0).**



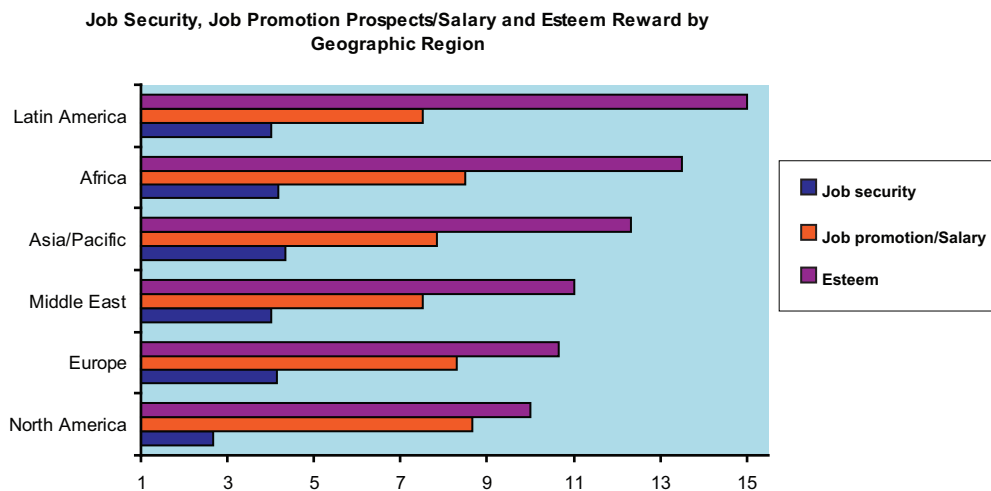
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**Figure 8: Mean (average) Values of the Effort and Reward Scales by Geographic Regions. The higher the bar, the higher effort and reward, respectively (range of the effort scale varies from 6.0 to 24.0, reward scale – 11.0 to 44.0).**





**Figure 9: Mean (average) Values of the Effort Subscales, by Geographic Regions (range of the job security scale varies from 2.0 to 8.0, job promotion scale – 4.0 to 16.0, esteem reward scale – 5.0 to 20.0).**



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### **WORK STRESS AND EMOTIONAL EXHAUSTION**

Emotional fatigue was greater among those with high overall work stress. Many ground staff workers undertake a great deal of emotional labour; interpreting and obeying many rules in order to maintain a calm atmosphere. ‘Customer facing’ ground staff, such as check-in workers, are particularly vulnerable to emotional labour. It is of interest to note that differences in exhaustion among ground staff personnel were more pronounced in cases of effort at work as opposed to cases of reward, when compared to cabin crew findings.

**Key points:**

- Almost 100% of ground staff representatives reported their members to be under constant time pressure due to a heavy workload, with the vast majority indicating ground staff workers were often pressured to work overtime as their jobs became more demanding between 2000 and 2007.
- More than half of union affiliates reported that ground staff workers were treated unfairly at work, and less than one third indicated that their members received the respect and prestige at work due to them for their achievements and accomplishments.
- The findings suggest that ground staff workers experienced or expected to experience an undesirable change in their work situation. The results also show that employment security for ground staff workers around the world was poor between 2000 and 2007.
- Among ground staff, work stress was found to be highest in North America, the Middle East and Europe.
- Representatives in Africa and Latin America were the *least* likely to report work stress resulting from an imbalance between efforts and rewards. This finding appeared to result from a high level of occupational rewards – specifically a high sense of esteem reward for one's work.
- Between 2000 and 2007, ground staff in North America suffered from more job *insecurity* than ground staff in all other regions.

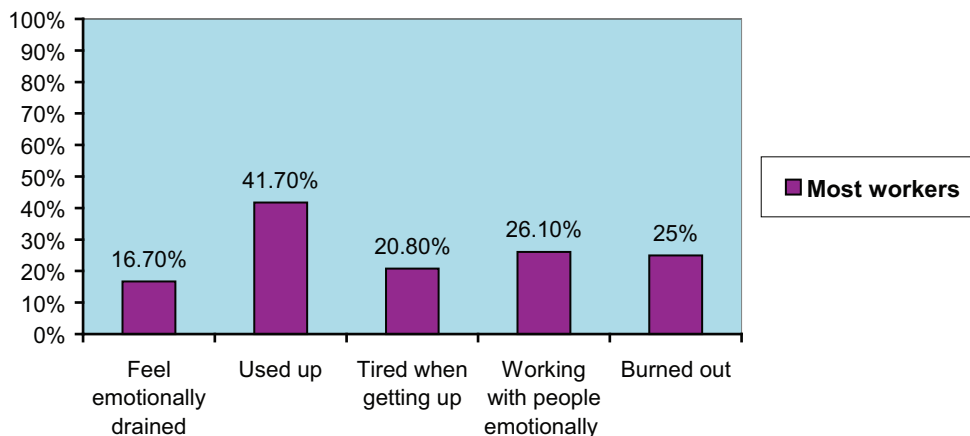
## SECTION VI: AIR TRAFFIC SERVICE WORKERS

### Part I. Fatigue and Burnout

Air traffic service workers have long campaigned for more control in the workplace, seeking to lower their stress levels. The various duties and tasks performed by air traffic service workers demand high concentration and consistent application of their training and skills on the job. Without doubt, their work can be, and often is, challenging and stressful, with high demands and little control over decision-making in various areas related to their jobs. Meanwhile, many unforeseen factors that often arise in their workplace can lead to increased stress. Fatigue can reduce their ability to remain alert and diminish workers' ability to successfully perform their duties under unforeseen circumstances.

The overall levels of burnout and fatigue among air traffic service workers, as reported by union affiliates, were estimated on the scale ranging from 'most' workers to 'some', to 'very few' and to 'none' suffering from various forms of fatigue and burnout.

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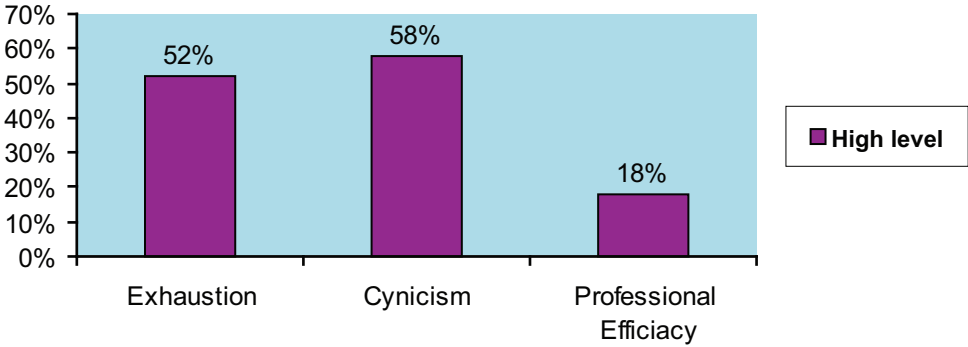
**Figure 1: Fatigue and Burnout among Air Traffic Service Workers**

On the whole, union affiliates indicated a moderate level of fatigue and burnout among air traffic service workers. Nearly half (42%) of Air Traffic Service representatives reported that most workers felt used up at the end of the work day, indicating a high level of stress was accumulated each and every day, from the high demand of the job, intense mental work, constant vigilance and concentration required by the job, long hours of work, and a low degree of voice and autonomy to be in charge of their jobs (in how their jobs are carried out, the organisation of work, and management decision-making). This is an important finding with critical implications for public safety. It is perhaps not too surprising that only 17% of air traffic service affiliates reported that most members felt emotionally drained. This may be due to the fact that air traffic service workers are sheltered from the general public, owing to their specific occupational role. Alarming, 21% of air traffic service affiliates reported most workers being tired when getting up for work. Given the tremendous responsibilities that air traffic service workers hold, reporting for duty already tired can have serious implications for public safety. Without doubt, fatigue can directly impact upon workers' ability to maintain sharp focus and unwavering attention throughout their workday. This finding warrants immediate attention.

Over half (52%) of air traffic service representatives reported their members suffered from a high level of fatigue in addition to nearly two thirds (58%) reporting air traffic service workers exhibited high levels of cynicism towards their job. Moreover, the vast majority (82%) observed low levels of professional efficacy among air traffic service workers. These results indicate that air traffic service workers were not satisfied with their work with regard to past, present and future accomplishments.

**Figure 2: Exhaustion, Cynicism and Professional Efficacy amongst Air Traffic Services**

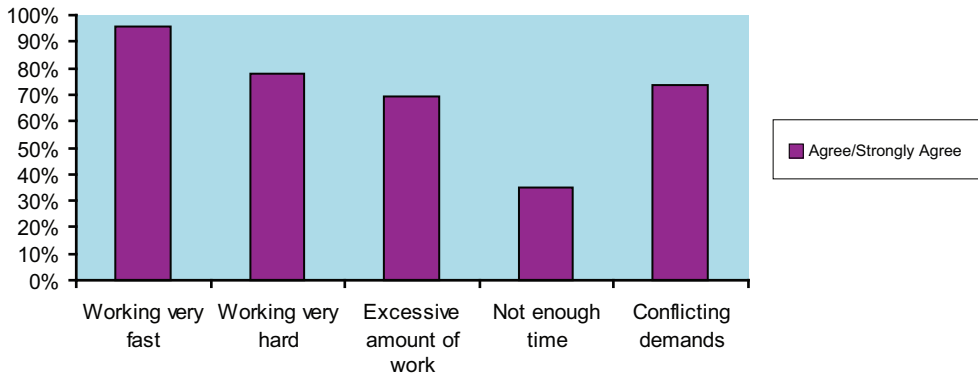
**Reported levels of Burnout for Air Traffic Service Workers**



**WORK DEMANDS**

Affiliates indicated moderate to high levels of job demands for air traffic service workers. More specifically, nearly all surveyed representatives (96%) strongly agreed or agreed that air traffic service workers had to work very fast, with the vast majority (78%) reporting air traffic service personnel had to work very hard. Meanwhile, 70% of union affiliates reported excessive amounts of work for air traffic service workers, with more than one third (35%) reporting that workers did not have enough time to perform their assigned work.

**Figure 3: Work Demands among Air Traffic Services**



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### *JOB CONTROL*

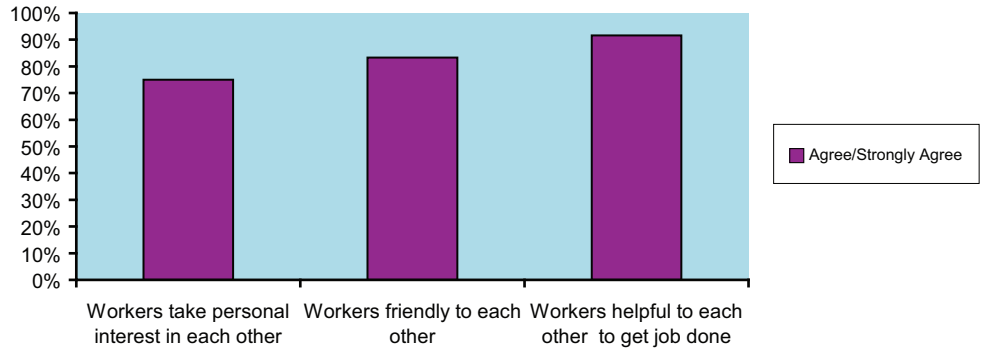
Overall, air traffic service representatives reported that between 2000 and 2007 their members had moderate to high (in most cases) levels of control over decision-making. All (100%) respondents either strongly agreed or agreed that air traffic service workers had opportunities to learn new things and had variety in their work. However, only 27% indicated that workers could decide how to do their work. This may be partially explained by the fact that the work of air traffic service personnel is closely controlled by flight plans, flight schedules, etc.

### *SUPPORT BY SUPERVISORS AND CO-WORKERS*

Overall, air traffic service union affiliates indicated high levels of supervisory support for workers between 2000 and 2007. Nearly two thirds (60%) of representatives strongly agreed or agreed with the statement that ‘Supervisors are concerned about the welfare of subordinates’. Notably, three quarters of affiliates reported supervisors as being helpful to air traffic service workers.

Similarly, air traffic service representatives reported great camaraderie in the workplace, indicating high levels of co-worker support available to their members. In fact, that support appears to reach considerably higher levels, and consistently so, than supervisory support. More specifically, nearly all (91%) affiliates reported that air traffic service workers were helpful to each other, while the vast majority (83%) of respondents reported that co-workers were friendly to each other.

**Figure 4: Co-Worker Support amongst Air Traffic Services**



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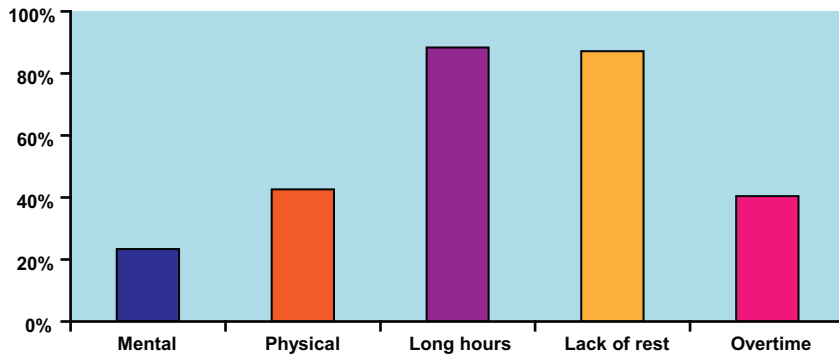
**TIME ISSUES: REST BREAKS AND RECREATION TIME**

Representatives' reports did not suggest drastic changes in the amount of guaranteed rest breaks received by air traffic service workers between 2000 and 2007. Indeed, 65% estimated that most of the ATS workers they represented had guaranteed rest breaks in 2000 compared to 63% in 2007. However, rest breaks appeared not to be guaranteed in all areas. Alarming is the percentage of representatives who indicated that none of their air traffic service members had guaranteed rest breaks – over one fifth (21%) of affiliates in 2007, and 17% in 2000. Considering the nature of air traffic service work with high requirements to stay continuously alert and vigilant, the non-availability of guaranteed rest breaks is cause for concern.

**JOB CHARACTERISTICS, FATIGUE AND BURNOUT: IS THERE A LINK?**

Working long/odd hours appeared to be the most significant factor contributing to fatigue experienced by air traffic service workers, indeed half of all respondents indicated this was the case. However, mental work also was revealed as an extremely significant factor, reported by 46% of affiliates as contributing to fatigue in air traffic service workers. 17% of respondents indicated that physical work contributed to fatigue among ATS workers, a result which was not surprising given the nature of the job. While one cannot draw a conclusion to say that fatigue was the cause of all absenteeism between 2000 and 2007, fatigue would surely be an important factor contributing to absenteeism (together with other factors). Has absenteeism increased since 2000? Yes, in fact, one third of air traffic service affiliates reported that absenteeism had increased between 2000 and 2007.

**Figure 5: Factors Contributing to Fatigue among Air Traffic Service Workers**



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**INTIMIDATION BY MANAGEMENT**

Here is a snapshot comparison of how representatives of air traffic service workers assessed their supervisors over a range of issues:

**Table 1: The Percentage of Representatives of Air Traffic Service Workers Critical about their Supervisors**

	<b>Air Traffic Services</b>
'Supervisors are concerned about welfare of subordinates?'	39% disagree
'Supervisors pay attention to what workers are saying?'	44% disagree

**COMPLAINTS MADE BY AIR TRAFFIC SERVICES**

One way of assessing the areas where working conditions have deteriorated the most is to examine reports of increased complaints by union affiliates representing air traffic service workers. In fact, those complaints provide clues about workers' morale, which can affect their ability to perform their work. Indeed, workers with poor morale are not best placed to undertake appropriate and effective emotional labour, interact with each other and perform safety duties.

Because air traffic service workers do not come into contact with passengers while working, questions involving passenger contact were omitted. Notably, the shares of union affiliates representing air traffic service workers who reported increases in complaints were considerably lower than those for cabin crew and ground staff. Below are the percentages of union affiliates who reported increased complaints, including their subject matter, by air traffic service workers since 2000:

- 50% inappropriate demands and expectations of management
- 50% disciplinary charges brought by management
- 50% cuts in staffing levels
- 50% intimidation by management
- 46% unmanageable workloads
- 42% training standard
- 42% unwanted shift patterns
- 37% poor morale or sense of well-being
- 17% inappropriate changes to working methods
- 17% physical abuse by other workers

Notably, 40 to 50% of affiliates representing air traffic service workers reported increases in official complaints to the union between 2000 and 2007.

**Key points:**

- On the whole, air traffic service workers appear to have experienced a moderate level of fatigue and burnout between 2000 and 2007, with important findings indicating workers being tired when getting up for work, feeling used up at the end of the workday and suffering from a high level of exhaustion.
- Working long/odd hours appeared to be the most significant factor contributing to fatigue experienced by air traffic service workers, indeed half of all respondents indicated this was the case.
- Between 2000 and 2007, air traffic service workers have experienced moderate to high levels of job demands, as they had to work very fast and very hard according to the majority of respondents.
- Air traffic service workers received good support from supervisors and co-workers alike, which can buffer stress caused by the demands they experience on the job. Their level of control in their work environment was also high, also relieving some stress.
- The findings suggest a definitive worsening of working conditions for air traffic service workers between 2000 and 2007, with over one fifth (21%) of affiliates reporting workers not receiving any guaranteed rest break in 2007.
- Air traffic service workers were unsatisfied with their past work and future prospects, with the vast majority (82%) of union affiliates reporting low levels of professional efficacy amongst their members.



**Part 2: Effort-Reward Imbalance**

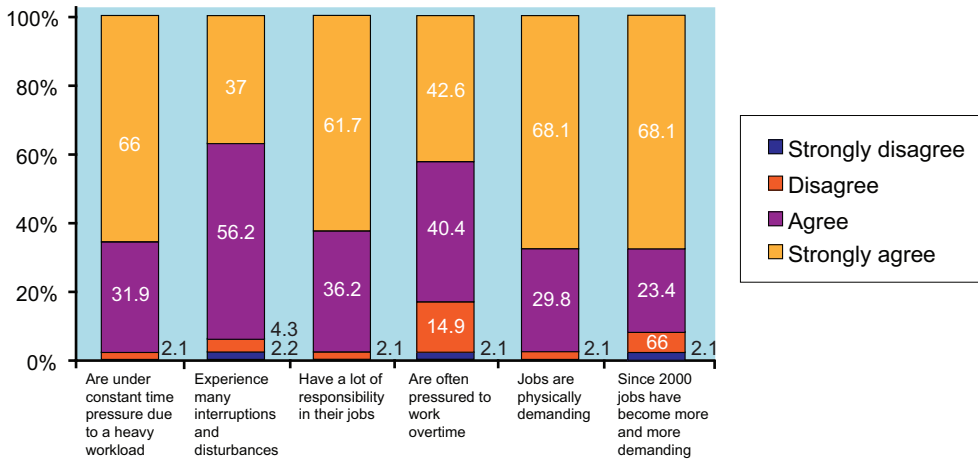
*EFFORT AT WORK*

Responses by affiliates to individual questions — ‘being under constant time pressure due to heavy workload’, ‘experiencing ongoing interruptions and disturbances’, ‘having a high level of responsibility at work’, ‘being pressured to work overtime’, ‘having a physically demanding job’ and ‘experiencing increasing job demands since 2000’ — provide an overall picture of effort at work as it relates to air traffic service workers.

Figure 6 shows that nearly all (90%) affiliates reported that air traffic service workers were under constant time pressure due to heavy workload. More than half of the representatives strongly agreed or agreed that air traffic service workers were experiencing many interruptions and disturbances. All (100%) affiliates strongly agreed or agreed that the job of Air Traffic Service personnel involved a lot of responsibility. Moreover, the majority (63%) of surveyed affiliates reported that the job of air traffic service personnel was physically demanding. Additionally, since 2000 their job has become increasingly demanding, according to an overwhelming majority (92%) of respondents.

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**Figure 6: Effort Items among Air Traffic Services**

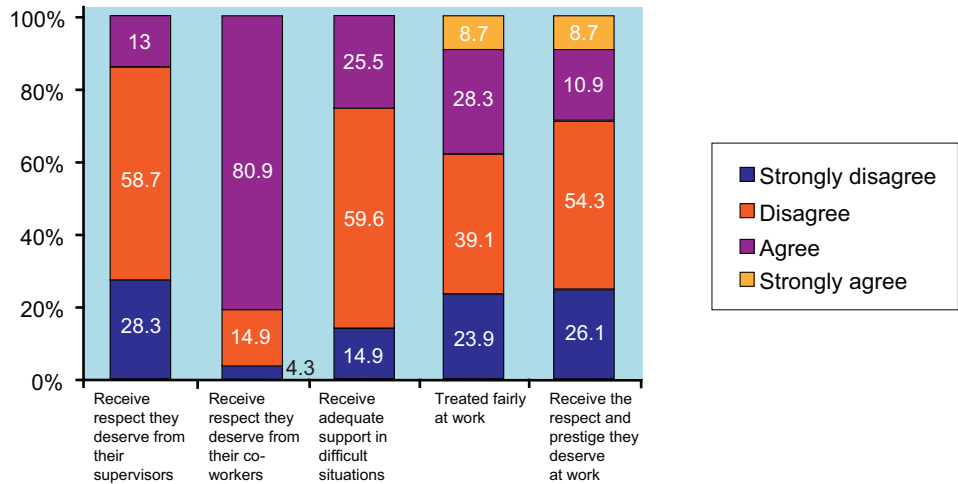


## REWARDS AT WORK: SENSE OF ESTEEM

Affiliates' feedback on various components of reward scale — esteem, job security and job promotion/salary – is shown in Figure 7. For example, 46% of ATS affiliates reported that their members did not receive respect they deserved from their supervisors. Moreover, one quarter of union affiliates claimed their members had been treated unfairly at work. On the positive side, half of respondents indicated that workers received adequate support in difficult situations, in addition to just over half of representatives who thought air traffic service personnel received the respect and prestige they deserved.

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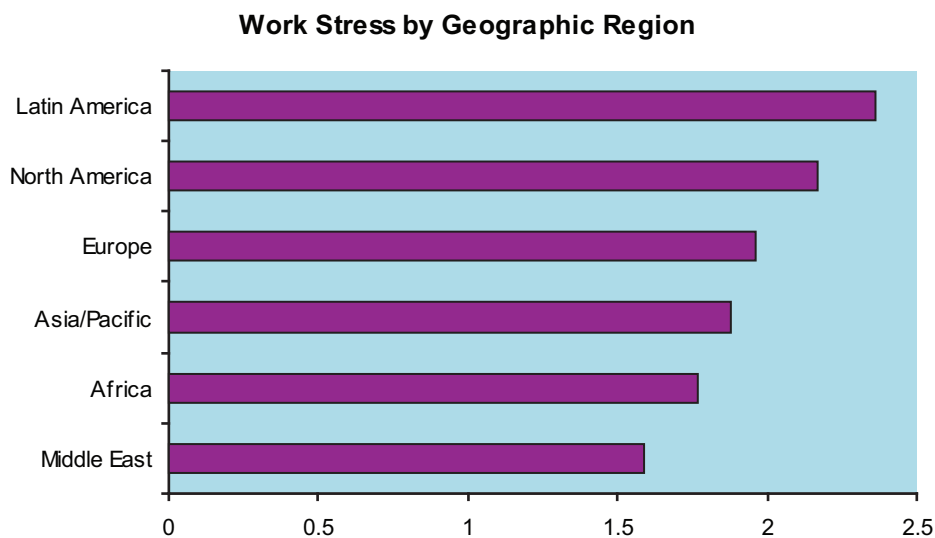
Figure 7: Esteem Items among Air Traffic Services



The vast majority of representatives (88%) reported that air traffic service personnel experienced or expected to experience an undesirable change in their work situation. More than two thirds (67%) of respondents reported poor employment security among ATS workers. In addition, salary/income of Air Traffic Service personnel was deemed inadequate, considering all their efforts and achievements. Many surveyed affiliates viewed prospects for promotion or the prospect of job security for their members as poor, while asserting that workers' current occupational position did not adequately reflect their education and training.

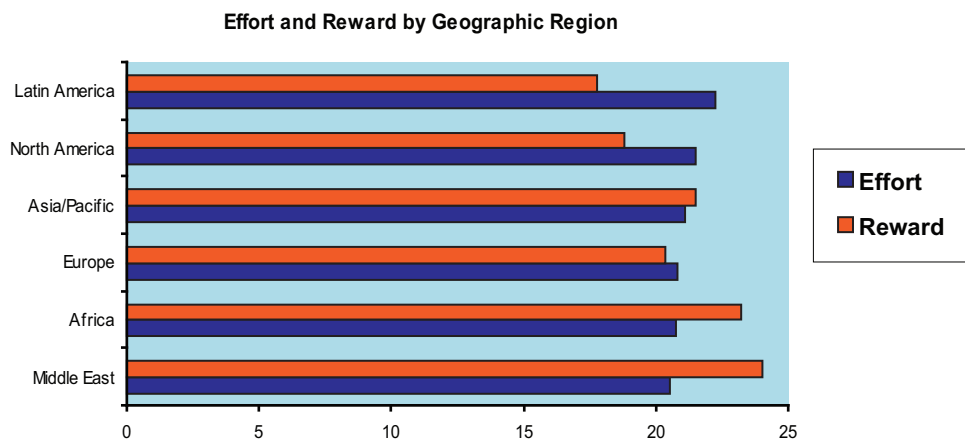
Figures 8 to 10 illustrate regional differences of work stress among air traffic service workers. Although an overall level of work stress was reported by fewer representatives from air traffic services compared to cabin crew and ground staff affiliates, regional differences were once again quite visible. For instance, more reports of work stress came from affiliates in the Middle East, Asia and North America, as opposed to respondents in Latin America, who were less likely to report work stress among their members (Figure 8). These differences could be explained by regional variations in effort (Figure 9), and not so much attributed to subcomponents of reward (Figure 10).

**Figure 8: Mean (average) Values of the Effort-Reward Ratio, by Geographic Regions (the higher the bar, the higher work stress; range of the effort-reward ratio varies from 0.25 to 4.0).**

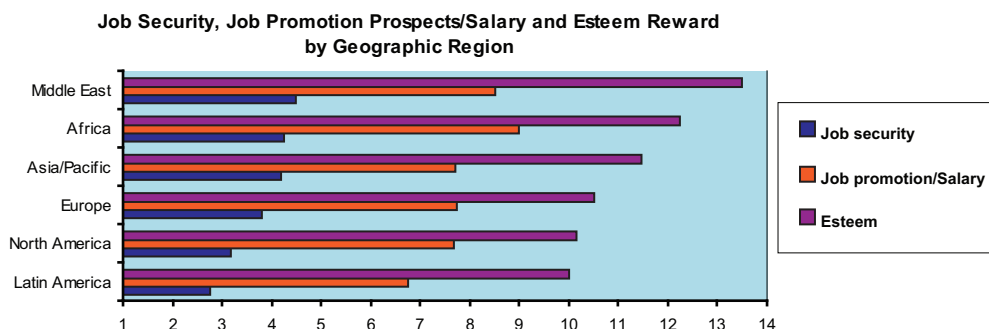


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**Figure 9: Mean (average) values of the effort and reward scales by geographic regions. The higher the bar, the higher effort and reward, respectively (range of the effort scale varies from 6.0 to 24.0, reward scale – 11.0 to 44.0).**



**Figure 10: Mean (average) Values of the Effort Subscales, by Geographic Regions (range of the job security scale varies from 2.0 to 8.0, job promotion scale – 4.0 to 16.0, esteem reward scale – 5.0 to 20.0).**



### WORK STRESS AND EMOTIONAL EXHAUSTION

Emotional exhaustion among air traffic service workers is related to work stress, as measured by the imbalance between efforts and occupational rewards they receive. Notably, this association is more pronounced among Air Traffic Service workers than among cabin crew and ground staff. There is a significant association between emotional exhaustion and the overall measure of work stress as well as the effort-component of this measure. Meanwhile, fatigue is, essentially, at the lowest level if rewards at work are considered satisfactory in relation to the amount of effort put into the job. Alternatively, fatigue is, essentially, at the highest level if rewards are considered insufficient in relation to the effort put into one’s job. There is a deep sense of injustice felt when rewards for work are not perceived to be balanced with efforts put into performing one’s job. That sense of injustice, or unfairness, causes chronic stress. Therefore, work stress, as measured by the effort-reward imbalance model, is related to the level of exhaustion experienced at work. While this relationship holds true across all three occupational groups, those effects are nonetheless more pronounced amongst air traffic service personnel.

#### Key points:

- Nearly all (90%) union affiliates reported that air traffic service workers were under constant time pressure due to heavy workload and experienced many interruptions and disturbances.
- All (100%) respondents strongly agreed or agreed that the job of air traffic service workers involved a lot of responsibility.
- Overall, the findings suggest that air traffic service workers have experienced or expected to experience an undesirable change in their work situation.
- Although fewer representatives of air traffic service workers reported work stress compared to cabin crew and ground staff affiliates, regional differences were clearly visible, with more reports of work stress coming from affiliates in the Middle East, Asia and North America and fewer from respondents in Latin America.
- Reports by air traffic service affiliates suggested their members were especially vulnerable to the link between work stress and emotional fatigue.

## SECTION VII: CONCLUSIONS

### *CONSISTENT FINDINGS GLOBALLY*

To the best of our knowledge, an entire industry has never been examined in the way this study has done. The data were hard to read but raised many important questions. This global study facilitated gaining an understanding of what happened to civil aviation workers globally between 2000 and 2007. The results confirmed the existing body of scientific evidence demonstrating that there is a range of factors that have contributed to the significant increase in stress and fatigue since 2000.

Between 2000 and 2007, regionally, across the board globally, the same decline in overall conditions resulted in important increases in stress and fatigue, albeit with some variations in some regions. The decline in conditions appeared to be largely direct impacts of 11th September 2001 and the major changes in the industry that it triggered. Overall, the findings appear quite consistent globally. The increases in fatigue, burnout, job strain, effort-reward imbalance, and social and economic insecurity that occurred in the industry between 2000 and 2007 appeared to have created a powerful predictor of chronic stress and fatigue in civil aviation workers.

In designing this study, it was posited that where there were collective agreements or collective action taken by unions, conditions would have been better than where these did not exist, and that workers therefore would have suffered less stress and fatigue. The evidence showed this to be true – but not to a significant extent globally. Even where there was evidence of collective agreements or collective actions, conditions worsened nonetheless between 2000 and 2007, and were accompanied by an increase in stress and fatigue experienced by civil aviation workers, in all three occupational groups. The findings indicated some conditions to be less bad where there were collective agreements, or where there had been collective action by ITF affiliates. In Europe, where regulation was still strongest in civil aviation, collective agreements remained stronger.<sup>42</sup> Notwithstanding, the results still revealed an increase in stress and fatigue in European workers between 2000 and 2007.

Overall, between 2000 and 2007, work security deteriorated markedly for cabin crew, ground staff, and air traffic services, and work-related health and related problems intensified. All three occupational groups reported increases in the pressure to complete work tasks, in the number of working hours (including overtime), and in absenteeism. Without adequate replacement workers, an increase in absenteeism may lead to increased overtime, fatigue, may compromise the quality of work, reduce productivity, and increase the risk of accidents for the workers who are not absent. Increases in absenteeism suggest increased levels of stress, fatigue, and work-related anxiety. These findings are worrying and warrant immediate attention.

### *A DIVIDED INDUSTRY*

The results of this study seemed to reveal a divided industry. In the emerging markets of Asia/Pacific and in the Middle East, predicted to soon surpass Europe and North America in terms of market share, but where the growth is predominantly taking place in new, private, non-union carriers, aviation workers reported less fatigue, less exhaustion, less burnout, lower effort-reward imbalance, more positive emotional labour, and fewer reports of diminished social and economic security. A number of factors may help to explain such discrepancies compared with the findings from other regions. In the emerging markets of Asia/Pacific and the Middle East, where unions may be new, their members may not yet be fully accustomed to union activity, and collective representation may be a relatively new concept. Cultural differences exist in how unions view dealing with management and in organising collective action. New unions may be weak in their organizing ability, or weak in knowing how to fully engage members they do have. In countries with extremely large populations, high levels of poverty and unemployment, or where democracy may be at a young stage, workers may be simply happy to have a job at any cost.

<sup>42</sup> This finding was not surprising given that unions in Europe have a long-established history of collective bargaining, are closer in sharing experiences than unions in other regions, and function in countries where there is a sense of social democracy to maintain social equilibrium.

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THE KEY FINDINGS FROM THIS GLOBAL STUDY ARE SUMMARIZED BELOW.

### Summary of Key Findings:

#### *FATIGUE, EMOTIONAL EXHAUSTION, FEELING EMOTIONALLY DRAINED*

- Emotional exhaustion was high and increased among all three groups.
- Cabin crew had the least emotional exhaustion of the three groups (30%).
- Air traffic services had the highest emotional exhaustion (52%) and the highest level of job strain.
- The evidence revealed that job load, in particular, was associated with emotional exhaustion.
- High emotional exhaustion is a serious risk factor for both workers and the travelling public. A significant body of literature demonstrates that more errors on the job are made when workers are exhausted physically and/or emotionally.
- Feeling emotionally drained increased among all groups.
- Among cabin crew the main fatigue factors were long/odd hours and lack of rest.
- Among air traffic services the main fatigue factors were long/odd hours and mental work.
- Among ground staff, a number of factors contributed most significantly to fatigue depending on the job. For example:
  - among check-in workers long/odd hours contributed most significantly to fatigue
  - among ticket sales/call centre workers mental work contributed most significantly to fatigue
  - among baggage handlers, catering staff, cleaners, and ramp workers, physical work contributed most significantly to fatigue
  - among ramp workers, long/odd hours and lack of rest also contributed significantly to fatigue.

### Summary of Key Findings:

#### *PRECARIOUSNESS*

- The percentage of short-term contracts increased substantially in all regions except in the Americas.
- More precariousness, more outsourcing, and more insecurity created less secure working and less secure life conditions.
- Increased insecurity contributed significantly to chronic stress.
- Exposure to chronic stress increases the risk of developing hypertension, cardiovascular disease, stroke, and depression. Once developed, these diseases usually require medical treatment for the rest of one's life.
- Strong social support and a sense that the rewards received are fair compared with the efforts put into the job can have protective effects against the risk of developing these chronic diseases.

To redress these findings and their implications, more stable employment is essential and urgently needed. The challenge here is great, as worldwide, employers increasingly implement insecure conditions of employment, considering these as both cost-cutting and profit-increasing measures.

### Summary of Key Findings:

#### SHIFT WORK PATTERNS

Overall there was a reduction in regular shift patterns for all aviation workers except air traffic service workers between 2000 and 2007, with various discrepancies among the regions

- 42% of European ground staff reported having a regular shift pattern in 2000
- 0% of North American ground staff reported having a regular shift pattern in 2000
- 36% of European ground staff reported having a regular shift pattern in 2007
- 0% of ground staff in the Middle East and in North America reported having a regular shift pattern in 2007
- There were significant differences by region for ground staff with regard to regular shift patterns both before and after 9/11, including in the benchmark year of 2000.

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### Summary of Key Findings:

#### WORK HOURS

- Cabin crew reported an increase in the number of flight hours from 2000 to 2007.
- Increased work hours are a risk for workers' health and for passenger safety.
- Increased work hours were combined with a number of other deteriorating conditions of work, reflected in increased emotional exhaustion, emotional drain, jobstrain, burnout, etc. (The ITF's Road Section uses as its campaign slogan: 'Fatigue kills"')

### Summary of Key Findings:

#### SOCIAL AND ECONOMIC SECURITY MEASURES

- Both income security and work security got worse for all groups, even where there was a collective agreement.
- Income security and work security got significantly worse for air traffic services where there was no collective agreement.
- Various legislative changes took place between 2000 and 2007 that created an 'enabling environment' for the downward spiral of civil aviation workers' conditions of work, worldwide.

Union growth and union organising are needed to redress these serious deteriorations. Where health and safety conditions are affected in the civil aviation industry, there is automatically a link to the safety of the traveling public as well.

## A NEED FOR REGULATORY ACTION

Discrepancies in regional findings found in this study can serve to punctuate the importance of union work and health and safety practices, taking into consideration the general context of the industry and the particular region, when developing priorities for action. There is no 'one size fits all' strategy that can be applied internationally.

If some findings have revealed a decline in conditions even where there are strong unions and collective bargaining agreements, this would reflect the state of the world in which we are living. Even with strong unions and collective bargaining agreements, unions have not always been able to succeed in protecting the rights of the workers they represent, due to the overwhelmingly strong forces of deregulation, neo-liberalism, globalisation and unfettered global capitalism.

Proper regulation of the civil aviation industry appears necessary to eliminate many of the conditions that have contributed to the significant increase in stress and fatigue worldwide since 2000. Regulation should promote 'fair' competition, for which a framework requires compliance, legitimacy and trust, achieved through a democratic process.<sup>43</sup> Since the credit crunch in 2008, governments have moved very quickly to intervene and have done so in a coordinated way all over the world, partly reversing the tendency towards 'light touch regulation'. Many governments are now re-committed to global governance of the banking industry. Why shouldn't there be renewed enthusiasm for global regulation of air transport, which, despite attempts to dilute its strength, has surely been a success story prior to deregulation? Making the evidence publicly known and bringing it to the level of policy-makers for discussion is an important starting point. Governments also have a vested interest in becoming familiar with the evidence because chronic diseases are costly to treat, and the health care systems in most countries around the world are not prepared for, and lack the resources to address significant growth rates in chronic diseases associated with work stress.

The issues identified through this study suggest the need to raise standards in air travel, for example standards of supervision, and to do so in the name of passenger and worker well-being and aviation safety. Perhaps there has never been a better time for the ITF and its affiliated trade unions to press for this outcome.

*One thing has emerged from this study as absolutely clear: the conditions of work in the civil aviation industry need to be improved, and improved significantly.*

43 Op. cit Harvey and Turnbull, p. 33



## Annex I: List of All Countries that Returned Complete Questionnaires

A total of 105 questionnaires were received from ITF affiliates in 54 countries. The number in each cell in parenthesis gives the number of questionnaires received for that employment group and region. Some countries returned more than one questionnaire for that particular employment group.

	<b>Cabin Crew</b>	<b>Ground Staff</b>	<b>Air Traffic Service</b>
<b>Africa</b>	Ethiopia, Kenya, South Africa, Zimbabwe (4)	Benin, Ethiopia, Morocco, Senegal, South Africa, Uganda (6)	Benin, Egypt, Ethiopia, Kenya, Madagascar, Senegal (6)
<b>Asia/Pacific</b>	Australia, Hong Kong, Indonesia, Japan, Korea, Malaysia, New Zealand, Sri Lanka, Thailand (11)	Australia, India, Japan, Pakistan, Thailand (6)	Australia, Fiji, Taiwan, Thailand, Uzbekistan (5)
<b>Middle East</b>	Jordan, Lebanon (2)	Jordan, Yemen (2)	Jordan (1)
<b>North America</b>	Canada, USA (6)	Canada, USA (3)	Canada, USA (2)
<b>Latin/South America</b>	Argentina, Brazil, Chile, Mexico (4)	Argentina, Dominica (2)	
<b>Europe</b>	Austria, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Italy, Norway, Poland, Portugal, Russia, Serbia, Spain, Sweden, Switzerland, Turkey (20)	Austria, Bulgaria, Denmark, France, Italy, Norway, Spain, Sweden, Switzerland, Turkey (15)	Austria, Finland, France, Germany, Great Britain, Iceland, Italy, Netherlands (10)

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