



## Survey Finds High Levels of Work-related Stress Among Flight Attendants

*Of those surveyed at a major airline in Ireland, more than half of the flight attendants believed that there was an unsatisfactory 'fit' between their skills and their jobs, and three-quarters said that they typically felt conflict between their employer's expectations and their own desires.*

—  
Caroline Kelleher  
and  
Sinéad McGilloway

Work-related stress (WRS; stress arising from aspects of the work environment perceived to be physically threatening and/or emotionally threatening) is a major occupational health concern. The authors conducted a preliminary study to examine the nature and extent of WRS experienced by flight attendants working for an Irish airline. A standardized test designed to evaluate WRS and a background questionnaire were administered to 70 flight attendants.<sup>1</sup> The results indicate that flight attendants experience high levels of WRS in areas that have important implications for their health and that highlight a need for appropriate recognition and formal support.

Work and occupational status are critical to physical well-being and psychological well-being and may exert both positive effects and negative effects on overall health.<sup>2</sup> The role of psychosocial factors and person/environment interaction have been the focus of a considerable body of research on WRS.<sup>3</sup>

The economic impact of WRS is substantial. In the United Kingdom, for example, an estimated 10 percent of gross national product is lost annually as a result of WRS; in the European Union, WRS accounts for more than one quarter of prolonged absences from work at an estimated annual cost of 20 billion euros.<sup>4,5</sup>



WRS among flight attendants has attracted renewed interest in recent years, especially since Sept. 11, 2001, when terrorists in the United States commandeered four airliners, which were flown into buildings in New York, New York, and near Washington, D.C., and into the ground near Johnstown, Pennsylvania. Since November 2001, airline industry authorities, under the auspices of the European Union, have been researching the impact of the work environment inside an aircraft on the health and comfort of the crew.<sup>6</sup>

Typically, flight attendants are required to perform the dual role of providing safety and service. The increasingly high levels of safety in air transportation might have obscured the importance of their safety role; in the public's mind, flight attendants may be more closely identified with the service role.<sup>7</sup> Nonetheless, flight attendants worldwide are trained to administer medical aid, direct the evacuation of airplanes, handle explosive devices and manage, control and restrain passengers who are violent, disorderly or abusive.<sup>8</sup>

A 2001 study indicated that public-sector jobs, such as that of a flight attendant, often require high standards of performance but offer little reward in terms of public esteem.<sup>9</sup> Another study highlighted the significantly higher rates of "burnout" (physical exhaustion or emotional exhaustion, usually as a result

of prolonged frustration), job stress and health problems of employees on shift-work schedules similar to those assigned to airline flight attendants.<sup>10</sup>

The results of a recent Internet-based study of WRS among 497 flight attendants indicated a detrimental pattern of high demand, which, in turn, indicates a need for appropriate formal support and informal support to avoid stress-related health problems.<sup>11</sup> Although the presence of such risks/hazards in this occupational group, coupled with the threat of global terrorism, have focused public attention on flight attendants, they remain an under-researched occupational group.<sup>12</sup> For example, the last known study of WRS among flight attendants in Ireland was conducted almost 20 years ago.<sup>13</sup>

The specific objectives of the authors' study were to examine factors that contribute to overall stress levels; to ascertain the extent of physical strain and psychological strain — considered to be results of stress — among study participants and to determine their coping resources; to explore the relationships between these factors; and to examine relevant subgroup differences.

## Study Questioned 70 Flight Attendants

Seventy participants from ages 19 to 53 were recruited for the study. A background questionnaire was devised to elicit socio-demographic information, especially information related to work and lifestyle, including perceived sources of job stress and life stress. The revised version of the *Occupational Stress Inventory (OSI-R)*<sup>14</sup> — a three-part questionnaire designed to evaluate occupational stress, psychological strain and coping resources — was used to provide a comprehensive, multi-dimensional and empirically derived assessment of occupational adjustment and health.

The *OSI-R* includes the following primary questionnaires (scales), each of which includes a number of subscales:<sup>15</sup>

- The occupational role questionnaire (ORQ), which comprises six subscales relating to specific aspects of the job, is designed to evaluate the amount of stress generated by an individual's job. The subscales — each of which comprises a series of questions — examine *role overload* (a measure of the extent to which job demands exceed personal resources and workplace resources), *role insufficiency* (a measure of an individual's perception of the extent to which he or she possesses the skills to perform a job), *role ambiguity* (a measure of an individual's uncertainty about the requirements of his or her job), *role boundary* (a measure of conflicting role demands and conflicting loyalties in the work setting), *responsibility* (a measure of an individual's feeling of responsibility for others) and *physical environment* (a measure of exposure to extreme physical conditions, such as heat or cold, on the job);

- The personal strain questionnaire (PSQ), which comprises four subscales, is designed to evaluate the effects of WRS on the individual. The subscales examine *vocational strain* (problems with work quality or output and attitudes toward work), *psychological strain* (psychological problems), *interpersonal strain* (disruption of relationships with others) and *physical strain* (physical ailments and inadequate personal-care habits); and,
- The personal resources questionnaire (PRQ), which comprises four subscales, is designed to evaluate the extent to which an individual has access to support and appropriate coping resources. The subscales examine *recreation* (participation in recreational activities and the pleasure obtained from them), *self care* (observation of guidelines for healthy diet, exercise, sleep and other health-care matters), *social support* (emotional support from family, friends and colleagues) and the use of *rational/cognitive skills* (coping skills such as setting priorities and organizing workloads in response to WRS).

Study participants included 57 women and 13 men with an average age of 30 (Figure 1), most of whom had been flight attendants for approximately six years. One in five participants was a senior staff member (cabin manager or other senior flight attendant), and one in five was assigned primarily to trans-Atlantic (long-haul) flights.

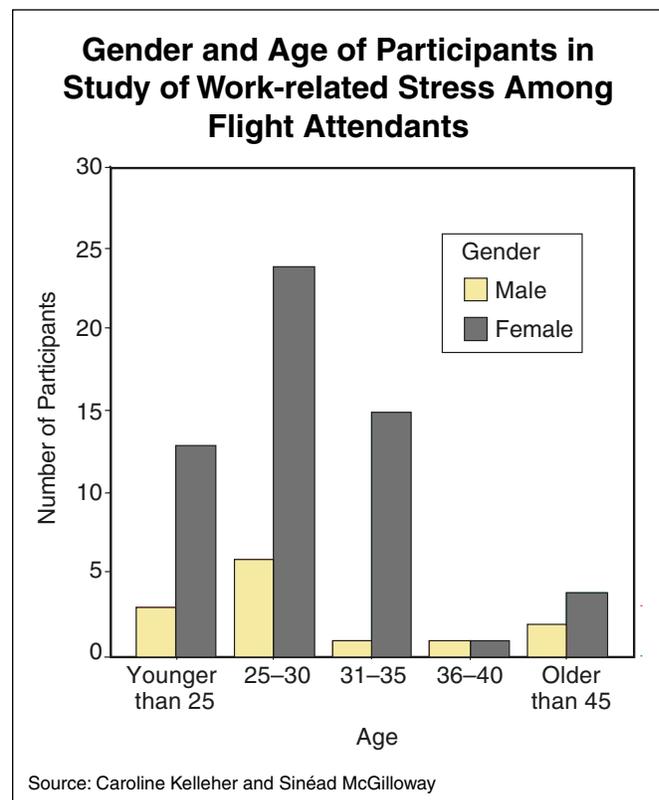


Figure 1

Twenty-one percent of the participants described the job as “quite” stressful or “very” stressful, and the largest proportion (29 percent) said that work was a major source of stress in their lives. Almost two-thirds said that they had taken from one “sick day” (a day’s absence from work because of ill health) to six sick days during the previous six months; 17 percent had taken seven days or more off during the same period because of illness. Eight percent had taken 13 sick days to more than 24 sick days during the six months preceding the study. There were generally high levels of tobacco smoking (37 percent) among participants, and all but three participants indicated that they typically consumed alcohol on a regular basis (e.g., daily or every few days).

The scores on each *OSI-R* scale were compared statistically to those obtained by the “public service/safety” comparison group (norm group) of 252 police officers, firefighters and military personnel. The results indicated that although the flight attendants had significantly better-than-average personal resources than the comparison group in the form of social support, they still obtained significantly above-average scores with respect to physical strain, role insufficiency, role boundary and responsibility. They also were less likely to engage in personal stress-reducing activities (e.g., regular physical examinations). The high scores with respect to physical strain indicate concerns about physical health, as well as commonly experienced symptoms such as aches and pains, stomachaches and erratic eating habits. Participants also were slightly more likely than the comparison group to report being exposed to high levels of environmental irritants such as noise, heat, moisture or unpleasant odors, as well as erratic work schedules.

These factors may be compounded by the difficulties reported by the participants with respect to their work role. For example, 56 percent believed that there was an unsatisfactory “fit” between their skills and their jobs — the largest proportion on any of the 10 items on the role insufficiency subscale. In addition, 46 percent believed that they were overqualified for their jobs, 34 percent believed that their careers were not progressing as they had hoped, and 24 percent believed that their jobs did not have a good future. About 75 percent also reported that they typically felt conflict between their employer’s expectations and their own desires, and that they had little pride in their work (role boundary). Additionally, participants felt more responsibility than their counterparts in the norm group for the performance and welfare of others.

Those under age 30 scored higher than those older than 30 with respect to role insufficiency, although they also scored higher in problem-solving (one of the skills evaluated within the rational/cognitive skills subscale of the PRQ). Thus, although they might have believed that their careers were not progressing, they also might have believed that there were other jobs that they could do. Some aspects of the physical work environment (e.g., erratic work schedules) also appeared to be problematic, and high scores on the physical strain subscale and, to some extent, the psychological strain subscale indicated concerns about both

physical health and mental health (e.g., disturbed sleep, aches and pains, feelings of depression and anxiety).

Further subgroup analyses showed differences in interpersonal strain scores between single participants and participants involved in committed relationships, indicating that the 29 single flight attendants experienced marginally more problems in their interpersonal relationships than their colleagues in committed relationships. Furthermore, the 18 flight attendants who operated mainly on short-haul flights (e.g., flights within mainland Europe) scored significantly higher than their 49 long-haul colleagues with respect to psychological strain. This was despite the fact that only five flight attendants in the short-haul group worked primarily on early flights that required very early check-in times.

## **Time in Job, Role Overload Linked**

The authors also found significant associations between the length of time spent in the job and role overload; that is, the longer the participants had worked as flight attendants, the greater their workload tended to be. In addition, the longer they had been flight attendants, the greater their feelings of responsibility for subordinates. There were insufficient numbers of senior staff included in the study to properly examine the effects of employment grade on levels of WRS. However, a correlational analysis (a statistical analysis of the relationship between variables) showed positive, albeit weak, associations between employment grade and both role overload and responsibility, and weak negative associations with role insufficiency and vocational strain. Thus, although more senior-staff participants tended to feel greater responsibility for others, they appeared to believe that they were using their skills (as measured on the role insufficiency subscale) and had a reasonably positive attitude toward their work (measured on the vocational strain subscale). However, they also reported a lack of necessary personal resources and workplace resources to help them deal with the demands of their job. Participants who subjectively reported high levels of job stress scored significantly higher than their “low stress” colleagues on the psychological strain subscale, the physical environment subscale and the role boundary subscale. No other significant subgroup differences emerged, suggesting that factors other than those included in the study may need to be considered to account for variations in WRS.

The authors also examined relationships between the various subscales and found that high scores on the physical strain subscale and psychological strain subscale were most consistently and most strongly associated with each other and with high scores on the interpersonal strain subscale, role boundary subscale and vocational strain subscale. Similarly, higher scores on the responsibility subscale were associated, to a moderate degree, with higher scores on the physical environment subscale. The role overload subscale and the physical environment subscale also were

positively correlated, to a moderate degree (i.e., high scores on one subscale were associated with high scores on the other subscale).

## Study Found High Absenteeism

The study's findings should be interpreted in the context of several methodological limitations, including the relatively small sample size (though adequate for a preliminary study), the predominance of females and participants under age 30, a relatively low proportion of senior staff and the reliance on only a subjective measure of general life stress.

Overall, the results, most of which are consistent with other research, indicate relatively high levels of absenteeism and higher-than-average levels of stress in a number of key domains, including specific aspects of the occupational role (i.e., role boundary and role insufficiency), as well as physical health problems and, to a lesser extent, mental health problems. Previous research has shown that any kind of role conflict and/or role ambiguity may lead to increased anxiety, depressed mood, low self-esteem and low job satisfaction.<sup>16</sup> The "above norm" scores with respect to both the physical environment subscale and the physical strain subscale indicate that the physical work environment may be negatively affecting survey participants. Similarly, other research has indicated that work that involves dealing extensively with the public on a daily basis can be tiring and requires considerable patience.<sup>17</sup>

Flight attendants frequently operate on a roster or shift system that involves overnight stays away from base and reserve duties. The higher psychological strain scores by the short-haul group in this study (when compared with their long-haul counterparts) are consistent with a small but growing pool of research that indicates that disturbed sleep patterns and circadian rhythms — which have been well documented among long-haul staff — may be more widespread than originally thought.<sup>18,19,20</sup> For example, Swedish short-haul airline flight attendants also reported sleep problems and generally associated them with early morning flights.<sup>21</sup> Other research found that boarding, distribution of meals and landing were perceived by flight attendants to be the most stressful times. The more often these functions are conducted, the greater the cumulative stress.<sup>22</sup> Flight attendants must remain alert in the event of an emergency, especially during takeoff and landing. Thus, it is plausible that, not unlike the "sustained vigilance" of firefighters, these psychological stressors could contribute to high overall levels of WRS.<sup>23</sup>

The fact that the short-haul group in this study scored significantly higher on psychological strain suggests that the combination of any number of the stressors mentioned may negatively affect their psychological health and well-being. However, an accurate evaluation of the effects of short-haul routes on levels of stress was not possible during this preliminary study because of the uneven distribution of numbers in each of the relevant subgroups. Further research in this area

is needed. Future research also should include more male flight attendants and more senior staff, including cabin managers. Cabin managers were difficult to recruit for the study because they typically operate on trans-Atlantic flights and often are out of the country. The limited data available indicate that they have less WRS than more junior staff, but this should be interpreted cautiously due to the small numbers involved.

Overall, the elevated levels of WRS in this small, but not atypical, sample have important implications for the recognition of flight attendants as an at-risk group for physical ill health and, in some cases, mental ill health. The findings indicate, in view of the comparison group used, that there are moderate parallels in terms of WRS between the work undertaken by flight attendants and other public-service personnel such as police officers. However, the flight attendants found specific aspects of their job potentially more stressful than police officers, firefighters, military personnel and other public-service employees. Although the flight attendants had generally good social support, their self-care scores were significantly below the norm, suggesting that flight attendants do not regularly engage in activities that reduce or alleviate chronic stress to the same extent as their counterparts in the comparison group.

Air travel has changed dramatically in the last 20 years, and much more formal training and support for flight attendants are now required, particularly in the aftermath of terrorist attacks and increases in "air rage" incidents in which angry passengers have challenged flight attendants — and sometimes have initiated physical violence. A 1986 study of flight attendants in Ireland found that the participants did not appear to be experiencing significant levels of maladaptive stress or strain, but nevertheless tended to have negative perceptions of the job and its long-term prospects.<sup>24</sup>

## Safety Role Should Be Acknowledged

Our findings suggest that the primary role of flight attendants in ensuring passenger safety — not just serving refreshments — should be acknowledged. The conflicting requirements of their safety role and their service role may present serious difficulties for flight attendants as they attempt to balance the continual need for safety and vigilance against the desire to meet passengers' needs. Airlines tend to overemphasize the service role of their flight attendants in their company literature and recruitment literature, thereby contributing to public misperceptions and a lack of recognition for the WRS associated with the role of flight attendants.<sup>25</sup> Therefore, airline management personnel should recognize the stresses associated with flight attendant duties and respond appropriately. In addition, further research and appropriate stress management interventions/programs are required to quantify and alleviate the risk of exposure among flight attendants to potentially harmful levels of WRS, which also may affect the public with whom they deal on a day-to-day basis. ♦

## About the Authors

Caroline Kelleher, a former airline flight attendant, is a postgraduate student of psychology at the National University of Ireland at Maynooth, Ireland. Her research interests include stress and trauma in a number of groups, including airline flight attendants and women who have been exposed to sexual violence.

Sinéad McGilloway, Ph.D., is a senior lecturer in psychology at the National University of Ireland at Maynooth. Her research interests include child and adult mental health, research evaluation, and the health and social care needs of vulnerable and marginalized groups. She also is conducting research on critical-incident stress among ambulance personnel and is supervising a small study of occupational stress and burnout among gerontology nursing staff.

## Notes

1. Osipow, S.H. *Occupational Stress Inventory Revised Edition (OSI-R): Professional Manual*. Florida, U.S.: Psychological Assessment Resources, 1998.
2. Warr, P.B. *Work, Unemployment and Mental Health*. Oxford, England: Clarendon, 1987.
3. Jamal, M. "Personal and Organisational Outcomes Related to Job Stress and Type-A Behaviour: A Study of Canadian and Chinese Employees." *Stress and Health* Volume 21 (2005): 129–137.
4. Eurostat. *Work-related Health Problems in the EU 1998–1999*. Luxembourg, 2001.
5. European Commission. *Guidance on Work-related Stress — Spice of Life or Kiss of Death?* Luxembourg: European Commission, 2001.
6. (Multiple authors and presentations.) *International Symposium on Health Effects in Aircraft Cabin Environment*. Oldenburg University, Oldenburg, Germany, June 2005.
7. Pollard, C. H. (2001). "Impact: A Study of Flight Attendant Survivors of Air Disasters." *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 62 (2-B), 1095.
8. Edwards, M. "Occupational Stress in the Aircraft Cabin." *Cabin Crew Safety* Volume 26 (September–October 1991).
9. Hodson, C. *Psychology and Work*. Hove, England: Routledge, 2001.
10. Jamal, M. "Burnout, Stress and Health of Employees on Non-standard Work Schedules: A Study of Canadian Workers." *Stress and Health* Volume 20 (2004): 113–119.
11. Morley-Kirk, J. *Work Stress in Multi-cultural Airline Flight Attendants* (in press).

12. Cano, J.M. (1999). "Passenger Airline Cabin Staff Stress Reduction Program." *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 59 (9-B), 5073.
13. Ryan, D. *A Study of Stress and Job Satisfaction in Irish Airline Cabin Crew*. Unpublished Thesis 764. Dublin, Ireland: University College Dublin, 1986.
14. Osipow.
15. Ibid.
16. Arnold, J.; Cooper, C.L.; Robertson, I.T. *Work Psychology: Understanding Human Behaviour in the Workplace*. (Third Edition) Harlow, England: Prentice Hall, 1998.
17. Caputo, J.S. *Stress and Burnout in the Library Service*. Phoenix, Arizona, U.S.: Oryx Press, 1991.
18. Bassett, J.R.; Spillane, R. "Urinary Cortisol Excretion and Mood Ratings in Aircraft Flight Attendants During a Tour of Duty Involving a Disruption in Circadian Rhythm." *Pharmacology, Biochemistry and Behaviour* Volume 27 (1987): 413–420.
19. Haermae, M.; Suvanto, S.; Partinen, M. "The Effect of Four-day Round Trip Flights Over 10 Time Zones on the Sleep-wakefulness Patterns of Airline Flight Attendants." *Ergonomics* Volume 37 (1994, No. 9): 1461–1478.
20. Suvanto, S.; Haermae, M.; Ilmarinen, J.; Partinen, M. "Effects of 10-hour Time Zone Changes on Female Flight Attendants' Circadian Rhythms of Body Temperature, Alertness and Visual Search." *Ergonomics* Volume 36 (1993): 613–625.
21. Erneling, L.; Oring, R.; Joachimsson, A. *Cabin Attendants' Working Environment*. Stockholm, Sweden: SAS, 1988.
22. Morley-Kirk.
23. Muchinsky, P.M. *Psychology Applied to Work: An Introduction to Industrial and Organisational Psychology* (Sixth edition). Belmont, California, U.S.: Wadworth Publishing, 2000.
24. Ryan.
25. Edwards.

## Further Reading From FSF Publications

Knight, Sue; Butcher, Nick. "Planning Prevents Conflict Between Cabin Service and Safety." *Cabin Crew Safety* Volume 34 (November–December 1999).

Chute, Rebecca D.; Wiener, Earl L. "Cockpit and Cabin Crews: Do Conflicting Mandates Put Them on a Collision Course?" *Cabin Crew Safety* Volume 29 (March–April 1994).

Livingston, Ralph D. "Aviation Safety Programs Should Boost Occupational Safety Awareness in the Cabin." *Cabin Crew Safety* Volume 27 (July–August 1992).

# What can you do to improve aviation safety?

## Join Flight Safety Foundation.

Your organization on the FSF membership list and Internet site presents your commitment to safety to the world.

- Receive 54 issues of FSF periodicals including *Accident Prevention*, *Cabin Crew Safety* and *Flight Safety Digest* that members may reproduce and use in their own publications.
- Receive discounts to attend well-established safety seminars for airline and corporate aviation managers.
- Receive member-only mailings of special reports on important safety issues such as controlled flight into terrain (CFIT), approach-and-landing accidents, human factors, and fatigue countermeasures.
- Receive discounts on Safety Services including operational safety audits.



### Flight Safety Foundation

An independent, industry-supported, nonprofit organization for the exchange of safety information for more than 50 years



### Want more information about Flight Safety Foundation?

Contact Ann Hill, director, membership and development, by e-mail: [hill@flightsafety.org](mailto:hill@flightsafety.org) or by telephone: +1 (703) 739-6700, ext. 105.

Visit our Internet site at [www.flightsafety.org](http://www.flightsafety.org).

### We Encourage Reprints

Articles in this publication, in the interest of aviation safety, may be reprinted, in whole or in part, but may not be offered for sale, used commercially or distributed electronically on the Internet or on any other electronic media without the express written permission of Flight Safety Foundation's director of publications. All uses must credit Flight Safety Foundation, *Cabin Crew Safety*, the specific article(s) and the author(s). Please send two copies of the reprinted material to the director of publications. These restrictions apply to all Flight Safety Foundation publications. Reprints must be ordered from the Foundation.

### What's Your Input?

In keeping with the Foundation's independent and nonpartisan mission to disseminate objective safety information, FSF publications solicit credible contributions that foster thought-provoking discussion of aviation safety issues. If you have an article proposal, a completed manuscript or a technical paper that may be appropriate for *Cabin Crew Safety*, please contact the director of publications. Reasonable care will be taken in handling a manuscript, but Flight Safety Foundation assumes no responsibility for material submitted. The publications staff reserves the right to edit all published submissions. The Foundation buys all rights to manuscripts and payment is made to authors upon publication. Contact the Publications Department for more information.

### Cabin Crew Safety

Copyright © 2005 by Flight Safety Foundation Inc. All rights reserved. ISSN 1057-5553

Suggestions and opinions expressed in FSF publications belong to the author(s) and are not necessarily endorsed by Flight Safety Foundation. This information is not intended to supersede operators'/manufacturers' policies, practices or requirements, or to supersede government regulations.

Staff: Mark Lacagnina, senior editor; Wayne Rosenkrans, senior editor; Linda Werfelman, senior editor; Rick Darby, associate editor; Karen K. Ehrlich, web and print production coordinator; Ann L. Mullikin, production designer; Susan D. Reed, production specialist; and Patricia Setze, librarian, Jerry Lederer Aviation Safety Library

Subscriptions: One year subscription for six issues includes postage and handling: US\$160 for members/US\$280 for nonmembers. Include old and new addresses when requesting address change. • Attention: Ahlam Wahdan, membership services coordinator, Flight Safety Foundation, Suite 300, 601 Madison Street, Alexandria, VA 22314 U.S. • Telephone: +1 (703) 739-6700 • Fax: +1 (703) 739-6708.