

The night shift: working against the body clock

With globalization and the expanding service economy, night work is changing from the exception to the rule for many. Driven by the "customer is king" principle, a growing body of employers are forcing employees to work hours that are out of sync with body clocks and life in society. As the case of an express delivery services company shows.

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Containers - in this case an 'igloo' - are designed to optimise aircraft carrying capacities. Taller workers cannot stand upright inside them.
Image: © ImageGlobe



1. TNT Express employs over 1,500 people in Liège, its sister company TNT Airways about 500, half of them pilots.

2. Trailers used to transport pallets or containers to and from a high loader.

3. Electric tow tractors for airports made by the French company Charlotte Manutention.

The icy mist shrouds the concrete parking lots sandwiched between the motorway and fields blanketed in a thin layer of snow. It is 11 pm and the digital dial on the outside thermometer reads -7°C. Shadowy figures hurry along the road. The first arrivals jockey to get in the revolving entrance doors. In half an hour, the night shift will get under way at Bierset airport in the Liège hinterland (eastern Belgium). The TNT international express delivery services company moved in 1998 from Cologne, which it had outgrown, to set up its air hub here, through which pass its fleet of 45 aircraft, offloading around 460 tonnes of cargo every night, most headed for European consumers. Almost all the airport's traffic is freight services, for it is ideally located hard by a motorway junction for easy delivery lorry access to big cities like Paris, Frankfurt, London and Amsterdam – all within a 400 km radius – while other goods are air-freighted on to their final destination.

TNT has made its express delivery service its USP for time-pressed customers. But to get their packages delivered in the morning, an entire chain of workers must busy itself overnight. On this bitterly-cold early February night, up to 1,000 employees¹ are on-site, around 200 of them out on the tarmac manipulating the towering high loaders to move

shipping containers from the Boeings onto cargo dollies² to be carted off by "charlattes"³ to the cavernous warehouse. An area the size of eight football pitches spread over two levels is the stage for a real-life mechanical ballet that will end before dawn. The sorting crew unpack the shipping containers and send their valuable contents on a 7 kilometre conveyor belt journey to other workers who pick them off and stow them in new shipping containers according to their final destination.

Igloos and MSDs

The forklifts whizzing around in top gear look like a disaster waiting to happen. "We don't get many bad accidents, the odd fracture or so since 1998, but not a single fatality," says TNT Human Resources manager Thierry Liégeois reassuringly. "The most frequent accidents are hands getting caught under packages, and falls or slipping on stairs," he says. The unions agree up to a point, but add a list of ailments that workers suffer. Musculoskeletal disorders (MSDs) are the worst. "A lot of workers have back problems. Slipped disks are common. Management sent round "back instructors" to teach us good handling practices. If we did it their way, not a single customer would get

their package on time," says FGTB chief shop steward Louis Saint-Remy.

Even a fully mechanized delivery services company can't operate without thousands of human hands. The cardboard boxes may not be all that heavy (anything over 30 kg is handled mechanically), but four straight hours' heaving them around adds up to a total load of several hundred kilos a night.

Also, the shipping containers are designed for aircraft, not human, body shapes. The ULD (Unit Load Devices – dubbed "igloos" by the workers due to their shape) packers can't work upright and are forced into awkward postures to do their jobs.

While workers tend to cite MSDs when quizzed about their occupational health, surprisingly few think to mention the effects of night work, even though there is plentiful evidence that this unnatural activity is hazardous to health (see Box).

"You get used to it," most workers reply, with some even adding, "I couldn't work days now". "It's mainly during holidays that the tiredness gets to you," they say. Each time, it takes several days for their bodies to readjust to normal daytime activity. What seems to get to them most is natural light starvation, especially in winter when they wake up with just two or three hours of daylight to enjoy. "My GP prescribes me vitamins and says I should use a sunbed," says Pablo Jurado. That aside, the young union steward is happy with his working conditions. "Before TNT, I worked in a foundry for several years. You can imagine that was a much harsher work environment," he adds.

Most of the workers interviewed didn't have too much to say about themselves. What concerns them more is the impact of

The shipping containers are designed for aircraft, not human, body shapes.

4. The analysis report on the latest results of the European Working Conditions Survey found that on average male night workers spend more time on care activity than other workers.

5. A beginner working 20 hours a week earns about 1,100 euros a month.

The main health problems from night work

Sleep disorders: the quality of daytime sleep is poorer than nocturnal sleep (because of noise, light, higher temperature), and shorter - generally two hours less per 24 hours compared to a day worker. The lack of sleep leads to drowsiness and an increased risk of accidents at or away from the workplace (road accidents, for example).

Digestive disorders: gastric acid production is known to follow a circadian rhythm (approximately 24 hours) which can be disrupted in night workers. Also, night work does nothing to promote healthy diets (eating ready meals, excess coffee consumption, imbibing alcohol in some cases, etc.).

Cardiovascular problems: recent studies have shown a relationship between night work or shift work and the risk of coronary heart disease resulting from disruption of the nervous system or hormone secretions, which increase the risk of arrhythmias and cardiac conduction disorders, and damage to artery walls.

Psychiatric disorders: night work is a source of stress and chronic fatigue, and may also be linked to an increased risk of depression.

Cancer risk: in 2008, the International Agency for Research on Cancer (IARC) classified night shift work (irregular, alternating periods of day and night work) as probably carcinogenic to humans. The IARC experts' conclusion was based on experimental animal tests and epidemiological studies among nurses working night shifts and airline stewardesses subject to frequent phase shifts. The studies point to a higher risk of breast cancer among these employees than those with more standard schedules. Night work is thought to disrupt the internal biological clock that regulates the alternating periods of wakefulness and sleep. Long-term exposure to artificial light at night inhibits melatonin or "sleep hormone" production, which impairs the immune system. It also resets clock-controlled genes that can result in the formation of cancer cells. Melatonin's role on oestrogen secretion may explain the excess risk of breast cancer.

Further reading

European Commission (2010) Study to support an Impact Assessment on further action at European level regarding Directive 2003/88/EC and the evolution of working time organisation, Annex 1 – Study on health and safety aspects of working time.

their non-standard working hours on their families. Being out of sync with the normal rhythm of other family members, especially children, and society in general inevitably leaves them somewhat marginalized. "I've got a seven-year-old son. At first he used to ask, 'Daddy, why do you sleep all the time?' He plays football on Saturday mornings. One time I couldn't get to the match because I was flat out. He cried all afternoon. Now he understands and he instinctively keeps his voice down and keeps the TV volume low," says 40-year-old Hassan Lyazghi. On the plus side, night work can free up time that day workers generally don't have: "I can take my son to school in the morning before getting my head down, and collect him afterwards," he enthuses.⁴

The employee reps think that the ability to work when children are sleeping and be there for them when they are awake may be one thing that draws some women employees to the job. From just a few when TNT first set up in Liège, women now account for between 10 and 15% of its workforce.

Sky-high blood pressure

The workers, aged between 25 and 35 on average, may have few enough complaints, but it is a fact that the work is gruelling on more than one count: disrupted biological clocks, handling loads at an unrelenting, machine-set pace, the very high pressure of meeting extremely tight deadlines dictated by commercial imperatives, and so on.

This cocktail of stresses can bring some to near breaking point. "Generally, people only start to complain after four or five years at the job, and the older they get, the harder they find it to work nights. It isn't something that creeps up over time. They can crack overnight. Some can't stand it any more and fall into a depression. It can happen as much to 20-year-olds as to older workers who've been fine with night work up to that point," says Louis Saint-Remy.

Ironically, part-time work increases the risk of burnout. TNT workers are not overpaid for a 20-hour workweek⁵, so many workers try to top up their income with daytime work. Union stewards reckon that at least 80% of staff have a second job – on or off the books. Many also work in the catering industry, another high risk sector for stress.

"If you've got a family to keep, there's a demand there. Your wife has needs, so do your kids. And then you've got TNT with its own demands, with night work, with pressure from managers and supervisors. Some workers can't take it any more, mentally or physically. They end up with ulcers or high blood pressure. We've already had to call an ambulance out at night for a worker whose blood pressure was up at 180 / 190 over 80," says Hassan Lyazghi.

Table 1 Night work and health (men, %)

	Able to work at 60 – yes I think so	Health and safety at risk because of work	Presenteeism	Work affects health negatively	Sickness absence	Poor well-being	Work injury
Night workers	60	40	42	36	43	20	20
Non night workers	55	25	33	25	44	17	16

Source: Fifth European Working Conditions Survey, Overview report, 2012

Table 2 Population in employment usually working at night (2010)

	Percentage of the total employment aged from 15 to 64 years
Belgium	4.4
Spain	5.9
France	7.2
EU 27	7.4
Italy	7.5
Netherlands	8.9
Germany	9
UK	11.1
Slovakia	14.7

Source: Eurostat, Labour Force Survey series, February 2012

The challenge of older workers

For all the many drawbacks of night work, staff turnover is not high. And absenteeism "is no higher than in banks or insurance companies," says Thierry Liégeois. The HR manager's opinion is confirmed by the unions who estimate that absenteeism among manual workers runs at 6 to 8%, but that it can rise up to about 25% among supervisory staff. "They are under pressure from both sides: from the workers they supervise and from their own superiors. They sign off the flight documents, so it's their responsibility if a problem crops up during the flight, such as from unbalanced stowage. Those who hold up best are those who started at the bottom of the TNT ladder because they know the ropes. Those who come in from outside often can't hack it," observes Léon Saint-Remy.

Any express packages not delivered before noon the following day is not charged for. This undertaking by TNT to its customers makes for an extremely rigid organization of work. That makes it economically vital for the company to ensure good labour relations: a few hours' walk-out can bring a system that runs like clockwork grinding to a halt, resulting in millions of dollars of losses. Both company and unions know that full well.

"Social dialogue with management is good," comments Léon Saint-Remy who will be taking his pension soon. In return, the company offers wages that may seem on the low-ish side but calculated on an hourly basis lie more at the upper end of the regional average. Workers

also get fringe benefits like a year-end bonus ("thirteenth month"), supplementary pension insurance, hospitalization insurance, etc. TNT also offers fast-track career advancement opportunities for the best-motivated employees – something which the workers here, many of whom have no paper qualifications, would likely be harder put to find in other companies in this region where unemployment stands at around 20%. "We try to spot potentials", says Thierry Liégeois, who himself started with TNT on the tarmac before earning his manager's stripes.

This staff retention policy could backfire in the years ahead when workers aged

over 50 could make up more than 10% of the workforce, because under Belgian law, workers over 55 with 20 years' of solid night work behind them can apply to come off nights without having to show medical grounds. "We're thinking about that. Working groups have been set up. Things have already been done to lighten the load on older workers. But for a company like ours, it would clearly be economically impossible to reassign 150 workers to the day shift," says the Human Resources department. Night work still has a bright future ahead of it in the express delivery services economy. ●

How many people work nights in the EU?

The European Working Time Directive defines a night worker as "any worker, who, during night time, works at least three hours of his daily working time as a normal course", and "any worker who is likely during night time to work a certain proportion of his annual working time".

Official EU statistics estimate that 7.4% of employees in the European Union (EU) worked at night in 2010 (see Table 2). That figure was 7% for the EU-15 in 2001.

The European Foundation for the Improvement of Living and Working Conditions' survey on perceived working conditions done in 2010 among 44 000 workers reports that:

- 19% of EU workers work between 10 pm and 5 am for at least two hours a month: 23% of male and 14% of female respondents;
- 25% of the men working these nighttime hours are aged between 25 and 39;
- 16% of the women are under 25;
- 10% of the workers work nights more than 5 times per month.

The survey's authors note in their analysis report that night work is strongly correlated with non-standard work contracts, as well as with shift work, and to a lesser extent with long working hours.