INTRODUCTION

The job of professional drivers in public transport is a service sector, where on the one hand, the requirements of the passengers, and on the other hand the needs of the drivers have to be considered in order to get and to offer satisfying services.

The working conditions of professional drivers become physically less strenuous due to technical innovations and computerizing. But activities like controlling and for example operating the desk in the driver’s cabine are increasing.

This results in other forms of strain such as the necessity of continuous attention and also monotony.

THEORIES

The definition of Rohmert (1973) says that Stress contains the objective demands which can be described and measured. These demands result from the job itself and the working conditions.
The individual variables are important. Strain means the effect of stress on a person depending on individual characteristics, skills and abilities.\(^1\) There is no direct relation between stress and strain.

The coping processes are also important. Lazarus emphasized the effect of the subjective perception of a situation – is it a challenge, is it harm-less or is it a threat and the estimation of one`s capability to cope with it.\(^2\)

There are different theories concerning the effects of working conditions on a person. And the answers to the question, what stress in the job is, are various. They are stretching from time pressure and environmental conditions such as heat or noise until to difficulties such as interruptions of the working process or `social stress`, caused by conflicts with colleagues or superiors.\(^3\)

The basic concept about what is going on in our body in stressful situations is the General Adaptation System – a concept by Hans Selye in the 30s of the last century.

![General Adaptation System Diagram](image)

Selye found that our bodies react to stress with a recognisable pattern of responses. There can be up to three phases that our resistance levels go through when we are exposed to a stressor.

The first level is the alarm phase. Blood pressure and muscle tension increases, blood-sugar rises, we breathe faster and deeper and we get a surge of adrenaline-like substances to give us extra physical capabilities should we need them. If the stressor no longer exists the body returns to its normal level of resistance.

However if the stressor persists, our level of resistance increases beyond normal, relaxed levels. Our bodies start to run in higher gear. High levels of stress hormones continue to help us cope with the stressor. This is appropriately called the resistance phase.

If the stressor persists for days, weeks, even years and our ressources are used up our body collapses often with more dangerous and extreme physical reactions. They are the same as in the alarm phase only more intense and more relentless. It is here in this third or exhaustion phase that our health suffers or even death can occur.

A common example of the third phase response is the high incidence of death in the first years of retirement for those not prepared for it and who have suddenly ended 40 years in a stressful, demanding job without much relaxation.

\(^1\) Gießer-Weigl & Schmidt, 1989

\(^2\) Nitsch, 1981

\(^3\) Greif, 1991
The main lesson we learn from Selye`s work is that high levels of stress hormones are meant to be released only briefly. If they continue without enough time to recharge then our resistance is severely lessened.

In some situations you need the power to act. In earlier times when e.g. wild animals or enemies came along and man had to fight against them or run away - so they needed a physical reaction to stay alive.

But how does it look today? You don`t have wild animals, enemies or unbearable environmental conditions.

Coming back to the professional drivers - as it is mentioned at the beginning, the driving conditions become less physically strenuous – all this demands more psychical efforts, more concentration and the traffic arises more and more. So you are under stressful conditions but you can`t react physically as your body wants to.

**Effects on drivers and traffic satety**

Stressful conditions have effects on the drivers on a physical level and their health: they complain about sleep problems, headache, chronic diseases such as heartdiseases, allergies. There are different grades of psychological problems: emotional and cognitive problems, dissatisfaction with work, with colleagues, depressions. On the Behavioural level occur refusal to work, aggressions against colleagues, family, other drivers; a higher nicotine, alcohol and even drug consumption.

The age plays a part. Every second professional driver is complaining about health problems caused by working conditions increasing proportionally with age.

Some findings of a study about bus drivers in the 70ies:

**Only 7% were reaching retirement; 43% left or changed their job; 45% got unfit for active service and 5% died before retirement.**

At least there are also consequences for the organisation such as: loss of productivity or even higher accident risk.

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4 Bockelmann, 1990
So that means that the stressful working conditions and their effects on the drivers is also an important risk factor regarding traffic safety. With the amount of strains the probability of wrong behaviour increases followed by a higher accident risk.

But not only stressful conditions such as time pressure or problems with colleagues lead to a higher accident risk. Monotony and weariness also reduce the efficiency. Signals are missed, reaction time is lengthened. The demanded capacity can be produced through enhanced effort.

Grüner et al. (65) showed that sleep deprivation of over 24 hours has the same effects as driving with 0.8‰. Driving with 0.8‰ means a 4 times higher accident risk. And

- the concentration decreases
- the reaction time on optical stimuli is lengthened 35%
- the visual capacity is reduced
- psychomotoric troubles appear.

SUBWAY DRIVERS IN VIENNA

Some results of a study about the working conditions and their effects on viennese subway drivers:

Drivers with a higher dissatisfaction with their job showed a higher rate of health problems. The more negative they were judging the working atmosphere the more muscle tensions they declared to have. Drivers working for many years in this job told about a more negative atmosphere, depressive moods and tensions than workers with not such a long practice.

The most burdening working conditions for subway drivers have been the irregular possibilities to go to the toilet and to eat something.

The characteristic anxiety had an effect on the dissatisfaction with the job. More anxious drivers showed more physical complaints. The most occurring physical complaints of them were back-problems and neck- and shoulder-aches - the classical diseases and complaints of professional drivers.

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5 Kroiss, Hohmann, Klemenjak, 1993
6 Wunsch, 1998
STEPS TO IMPROVE
So what can we do to avoid health damages and dissatisfaction with the professional drivers job?

Steps to improve the physical and psychical situation consist among others in

- giving the drivers more possibilities to decide the structure and time planning of their work; using their knowledge as experts, and giving them more control over their work; no control means a higher level of dissatisfaction and even physical problems!
- avoiding "gaps" in the schedule and
- if not avoidable, for example providing the drivers with a fitness room;
- paying attention to the drivers` needs – for example: the best timetable for the organisation does not work if it can only be followed under stressful conditions;
- the possibility to have a break under tolerably relaxing conditions, for example to have a snack undisturbed;
- according to the main complaints of the drivers, concernig back problems,
- the awareness of health should be raised, for example through a fitness room,
- gymnastics, more variety in the food in cantines or food automats;
- as well as the information about the effects of stress on health and on the traffic safety.

- evaluating and thinking over the working conditions required by law.

REFERENCES


