ICHCA
International Limited

INTERNATIONAL SAFETY PANEL

GENERAL SERIES PAMPHLET #6

Medical Standards for “Fitness to Drive”

by

Dr Joachim Meifort

ICHCA INTERNATIONAL LIMITED is an independent, non-political, international membership organisation and is dedicated to the promotion of safety and efficiency in the handling and movement of goods by all modes and during all phases of both the national and international supply chains. Originally established in 1952 and incorporated in 2002, it operates through a series of Local, National and Regional Chapters, Panels, Working Groups and Correspondence Groups and represents the cargo handling world at various international organisations, including the International Maritime Organization (IMO), United Nations Conference on Trade and Development (UNCTAD), International Labour Organization (ILO) and the International Standards Organization (ISO).

Its members included ports, terminals, transport companies and other groups associated with cargo handling and coordination. Members of ICHCA International Panels represent a substantial cross-section of senior experts and professionals from all sectors of the cargo transport industry globally. Members benefit from consulting services and informative publications dealing with technical matters, "best practice" advice and cargo handling news.

For more information on ICHCA International and its services please visit/contact –

ICHCA International Limited
Suite 2, 85 Western Road,
Romford, Essex, RM1 3LS
United Kingdom

Tel: *+44 (0) 1708 735295*
Fax: *+44 (0) 1708 735225*
Email: *info@ichca.com.*
Website: *www.ichca.com.*

The International Safety Panel Briefing Pamphlet series consists of the following subjects:

No. 1 International Labour Office (ILO) Convention No. 152 Occupational Safety and Health in Dockwork (*revised)*
No. 2 Ships Lifting Plant (*revised)*
No. 3 The International Maritime Dangerous Goods (IMDG) Code (*revised)*)
No. 4 Classification Societies (*revised*)
No. 5 Container Terminal Safety (*revised*)
No. 6 Guidance on the Preparation of Emergency Plans (*revised)*
No. 7 Safe Cleaning of Freight Containers *(revised)*
No. 8 Safe Working on Container Ships
No. 9 Safe Use of Flexible Intermediate Bulk Containers (FIBCs) *Joint publication with EFIBCA (under further revision*)
No. 10 Safe Working at Ro-Ro Terminals *(under revision)*
No. 11 The International Convention for Safe Containers (CSC) (*revised)*
No. 12 Safety Audit System for Ports
No. 13 Loading and Unloading of Solid Bulk Cargoes *(revised)*
No. 14 The Role of the Independent Marine Surveyor in Assisting Claims Handling (*revised)*
No. 15 Substance Abuse
No. 16 Safe Use of Textile Slings
No. 17 Shore Ramps and Walkways *(revised)*
No. 18 Port State Control
No. 19 Safe Handling of Interlocked Flats *(under revision)*
No. 20 Unseen Dangers in Containers (*revised)*
No. 21 Stow it right
No. 22 Suspension Trauma
No. 23 Safe Handling of Forest Products
No. 24 Safe use of Road Vehicle Twistlocks
No. 25 An Illustrated Guide to Container Type and Size Codes
No. 26 Safe Handling of Dangerous Bulk Liquids and Gases at the Ship/Shore Interface
No. 27 Safe Working with Pallets
No. 28 Safe Slinging
No. 29 Safe Handling of Logs from Water in British Columbia
No. 30 Safe Handling of Tank Containers (*joint publication with ITCO)*
No. 31 Safe Operation of Passenger Terminals
No. 32 Safe Use of Cargo Strapping for Lifting Purposes
No. 33 Safe Working with Reefer Containers
No. 34 Container Top Safety
No. 35 Provisions for the Safe Lashing of Deck Containers
No. 36 Safe Operation of Straddle Carriers
No. 37 Safe use of General Freight Containers
No. 38 Safe Handling of Flexitanks in General Purpose Freight Containers

The International Safety Panel Research Paper series consists of the following research papers:

No. 1 Semi-Automatic Twistlocks

No. 2 Fumes in Ships Holds (*revised)*
No. 3 Health & Safety Assessments in Ports (*revised)*
No. 4 Container Top Safety, Lashing and Other Related Matters *(partly revised as BP#34)*
No. 5 Port & Terminal Accident Statistics (*revised)*
No. 6 Safe Handling of Radioactive Materials in Ports and Harbour Areas (*revised)*
No. 7 Ship Design Considerations for Stevedore Safety (*revised)*
No. 8 Safe Walkways in Port & Terminal Areas
No. 9 Personal Protective Equipment & Clothing
No. 10 Back Pain
No. 11 Lifting Persons at Work for Cargo Handling Purposes in the Port Industry
No. 12 Whole Body Vibration
No. 13 Lifting of Containers by Rubber Tyred Gantry Cranes
No. 14 Lashing of Deck Containers
No. 15 Terminal Operations in High Winds
No. 16 Crane Driver Ergonomics
No. 17 Terminal Lighting (*in final preparation)*

The International Safety Panel Technical/Operational Advice series consists of the following:

No. 1 Vertical Tandem Lifting of Freight Containers
No. 1A Vertical Tandem Lifting – Operations Checklist
No. 2 Container Vessels – Safety aspects of Lashing on Deck 40' and 45' containers with particular regard to horizontal lashings
No. 3 Guidelines on the Lifting of Persons for Cargo Handling Purposes

Plasticised Pocket Cards
Published jointlywith TT Club

IIL/1 Dangerous Goods by Sea Documentation (*revised with IMDG Code amdt 35)*
IIL/2 Dangerous Goods by Sea: The IMDG Code Labels, Placards, Marks and Signs (*revised with IMDG Code amdt 35)*
IIL/3 Confined Spaces on Board Dry Cargo Ships
IIL/4 Entry into Freight Containers
IIL/5, 6 Safe slinging
IIL/7 Packing Cargo Transport Units (*in preparation)*
IIL/8 Security awareness in the marine transport chain (*in preparation)*

General Series

No. 1 Guidelines to Shipping Packaged Dangerous Goods by Sea – Advice to Consignors and Shippers
No. 2 Fire Fighting in Ports and on Ships
No. 3 WindStorm (*joint publication with TT Club)*
No. 4 Gear Stores (*joint publication with LEEA)*
No. 5 Ships' Crews Coming Ashore at Working Terminals
No. 6 Medical Standards for Terminal Equipment Drivers
No. 7 Recommended Minimum Safety Specifications for Quay Container Cranes (*joint publication with PEMA and TT Club))*

Other titles in many of the series are in preparation

This publication is one of a series developed by the International Safety Panel ("Safety Panel") of ICHCA International Limited ("ICHCA"). The series is designed to inform those involved in the cargo-handling field of various practical health and safety issues. ICHCA

aims to encourage port safety, the reduction of accidents in port work and the protection of port workers' health.

ICHCA prepares its publications according to the information available at the time of publication. This publication does not constitute professional advice nor is it an exhaustive summary of the information available on the subject matter to which the publication refers. The publication should always be read in conjunction with the relevant national and international legislation and any applicable regulations, standards and codes of practice. Every effort is made to ensure the accuracy of the information but neither ICHCA nor any member of the Safety Panel is responsible for any loss, damage, costs or expenses incurred (whether or not in negligence) arising from reliance on or interpretation of the publication.

The comments set out in this publication are not necessarily the views of ICHCA or any member of the Safety Panel

ICHCA International Limited - INTERNATIONAL SAFETY PANEL

The International Safety Panel is composed of safety and training officers and directors, transport consultants, representatives from leading safety and training organisations, enforcement agencies, trade unions, insurance interests, institutions and leading authorities on the subject area from around the world.

Mike Compton (Chairman), *Circlechief AP*, UK
John Alexander, UK
Meir Amar, *Port of Ashdod,* ISRAEL
Paul Auston, *Checkmate UK Limited*, UK
David Avery, *Firefly Limited*, UK
Peter Bamford*,* CANADA
Philip Beesemer, *ECT,* THE NETHERLANDS
Geoff Beesley, *Newcastle Stevedores,* AUSTRALIA
Didi Ould Biha, *SAMMA,* MAURITANIA
Jan Boermans, *DP World*, THE NETHERLANDS
Mike Bohlman, *Horizon Lines,* USA (Deputy Chairman)
Roy Boneham, UK
Bill Brassington, UK
Jim Chubb, *Southern Seas Europe Ltd,* UK
Daniele Ciulli, *Contshipitalia,* Italy
John Crowley, *APM Terminals,* USA
Johan van Daele, *Zeebrugge,* BELGIUM
Rob Dieda, *SSA,* USA
Trevor Dixon, *WNTI,* UK
Steve Durham, *Trinity House,* UK
Patricia Esquival, *OPCSA,* SPAIN
Margaret Fitzgerald, IRELAND
Pamela Fry, *DP World,* CANADA
Kirsty Goodwin, *SAMSA,* SOUTH AFRICA
Fabian Guerra, *Fabian Guerra Associates*, EQUADOR
Charles Haine, *DP World,* DUBAI
Harri Halme, *Min. of Social Affairs & Health, Dept for Occupational Health & Safety*, FINLAND
Les Heather, *Drake International,* UK
Joseph Hogan, *APM Terminals,* DUBAI
Geoff Holden, *LEEA,* UK
Hans Jacob, *APMT,* THE NETHERLANDS
Laurence Jones, *TT Club,* AUSTRALIA
Larry Keiman, *Matrans Holding BV,* THE NETHERLANDS
Gabriel Kierkels, *APM Terminals,* THE NETHERLANDS
Jos Koning, *MARIN,* THE NETHERLANDS
Henrik Kristensen, *APM Terminals,* THE NETHERLANDS
Ryan Jones, *APM Terminals,* CHINA
Fer van de Laar, *IAPH*, THE NETHERLANDS
Christof Lautwein, *Malmedie,* GERMANY
Richard Marks, *Royal Haskoning,* UK
Joachim Meifort, *Hamburger Hafen- und Logistik AG*, GERMANY
Marios Meletiou, *ILO*, SWITZERLAND
John Miller, *Mersey Docks & Harbour Company*, UK
Al le Monnier, *ILWU,* CANADA
Gordon Moir, *TŰVReinland,* JAPAN
Hannu Oja, *Kone Cranes and PEMA,* FINLAND
Manuel Ortuno, *Lloyds Register,* GERMANY

Nic Paines, *Gordon, Giles & Coy Ltd*, UK
Daan Potters, *Merford,* THE NETHERLANDS
Irfan Rahim, *IMO,* UK
Peter Rasmussen, *BIMCO,* DENMARK
Risto Repo, *Accident Investigation Bureau of Finland*, FINLAND
Rene van Rijn, *Euroports Holdings*, BELGIUM
Raymond van Rooyan, *SAPO,* SOUTH AFRICA
Cedric Rousseau, *CMA-CGM,* FRANCE
Alf Sandberg, *GARD,* NORWAY
Ambroise Sarr, *Port of Dakar,* SENEGAL
Ron Signorino, *The Blueoceana Company, Inc*., USA
Tom Sims, UK
Ken Smith, *USCG,* USA
Matt Smurr, *Maersk Inc,* USA
Armin Steinhoff, *Behörde für Arbeit, Hamburg*, GERMANY
Peregrine Storrs-Fox, *TT Club,* UK
Bala Subramaniam, INDIA
Mark Sultana, *Malta Freeport Terminals Ltd,* MALTA
Chris Symonds, *Drake International,* UK
Diego Teurelincx, *FEPORT,* BELGIUM
Markus Theuerholz, *German Lashing.* GERMANY
David Tozer, *Lloyds Register,* UK
Gerrit Uitbeijerse, THE NETHERLANDS
Hubert Vanleenhove, BELGIUM
Evert Wijdeveld, *Environmental & Safety Affairs, Deltalinqs*, THE NETHERLANDS (Deputy Chairman)
Bill Williams, *Maersk Inc.* USA
Dave Wilson, *Hutchison Ports (UK) Limited*, UK
Jan Zwaan, *Transport Canada,* CANADA
Beat Zwygart, *LASSTEC,* FRANCE

OBSERVERS:
Harry Lam, *HIT,* HONG KONG
John Mace, *International Group of P&I Clubs,* UK
Capt. Jim McNamara, *National Cargo Bureau, Inc*., USA
Samuel Ng, *Maritime Department,* HONG KONG
Pedro J. Roman Nunez, *Puertos del Estado*, SPAIN
Mick Payze, AUSTRALIA
Charles Visconti, *International Cargo Gear Bureau, Inc*., USA

AFFILIATED MEMBERS:
OPIG, EUROPE

The above lists those persons who were members of the Panel when the pamphlet was published. However, membership does change and a list of current members can always be obtained from the ICHCA International Secretariat.

SHORT PERSONAL HISTORY OF THE AUTHOR

Joachim Meifort

Dr Joachim Meifort worked for several years at hospitals in Hamburg and in 1984 he began to specialize in occupational medicine. Since then he has been a medical advisor to marine terminal operators, stevedores and their repair and maintenance shops.

Since 1986 he has been employed at HHLA (Hamburger Hafen- und Logistik AG) as their medical advisor. He joined the ICHCA International Safety Panel in its first year in 1991.

Contents **Page**

Published: September 2011 ISBN: 978-1-85330-036-3

MEDICAL STANDARDS ON FITNESS TO DRIVE

1. Introduction

1.1 "Internal movement vehicles should only be driven by portworkers who are competent and authorised to do so. To be authorized, they should be over 18 years of age, medically fit and appropriately trained, both on the type of vehicle used and the operations to be performed. Many terminal and port operators operate a licence or permit system that clearly identifies driver and operator competencies" - *Safety and Health in Ports, ILO Code of Practice Paragraph 6.10.2.*

1.2 This principle should be applied to portworkers who drive or operate any terminal equipment or ship board lifting appliances.

1.3 No definition is given of what the term "medically fit' means and no further information about criteria or standardised procedures on making such an assessment are given in the Code of Practice.

2. Aims of the Pamphlet

2.1 This pamphlet aims at identifying and discussing the basic elements of procedures and content of a driver's fitness assessment.

2.2 For the relative small number of drivers who cannot meet the fitness requirements it is important for the physician

- to be precise in identifying the specific criteria that cannot be met
- to advise, if possible, under what improved circumstances the criteria could be met
- to check whether personal resources can compensate for an impairment
- to consider whether a driver licence can be permitted with restrictions
- to create a basis – to which all involved parties can agree - for talks between employer and driver regarding further employment

2.3 The pamphlet primarily aims to support physicians and other health professionals who make such assessments whilst describing criteria of quality and making drivers' fitness assessments transparent to all parties involved.

2.4 At all times, the examination and findings must be conducted by a qualified medical practitioner.

2.5 The examination, findings and records must be kept confidential.

3. International Medical Standards on Fitness to Drive in the Port Industry

3.1 It is not known to what extent the ILO recommendation is practiced in the port industry nor the standards that are used.

3.2 There is no one single document in use on marine terminals world wide and standards come from various sources. They may specifically reflect the situation in the port industry or be used nationwide for all workers performing driving jobs. They may be based on health and safety laws or on traffic laws modified by agreements between employers and trade unions or work councils.

3.3 In addition many national medical societies have published fitness criteria for impaired drivers.

4. Elements of a Fitness Assessment

4.1 Elements of the procedure of a fitness assessment

4.1.1 The employer's instruction

4.1.1.1 A physician who is asked to make an initial fitness assessment usually needs a specific instruction from the driver's employer as a starting point.

4.1.2 Identification of the specific fitness criteria a driver has to meet

4.1.2.1 The medical standard to be used by the physician should be understood by all involved. Such standards of 'fitness to drive' often involve different levels of fitness. It is necessary, therefore, to identify the specific fitness criteria the individual driver has to meet.

4.1.2.2 To make a fitness assessment, a procedure of data collection is necessary. Most important are taking drivers' medical history and the physical examination itself.

4.1.3 Assessment

4.1.3.1 In his assessment the physician compares the data of the history (with, if necessary, additional information from known medical reports) and the data of his examination with the minimal requirements given in the adopted standard.

4.1.3.2 Whenever a driver does not meet the standard, supplementary steps of data gathering and assessments in an extended examination process are necessary. Additional information from a specialist of another medical field, eg an ophthalmologist, may be needed.

4.1.4 Feedback

4.1.4.1 The driver and the employer need feedback to complete the assessment.

4.2 Elements of the framework of a driver's fitness assessment

4.2.1 The work contract between employer and driver

4.2.1.1 Drivers' fitness assessments usually will be based on the work contract including supplementary agreements. It is important that a driver is informed about the details of his duty to pass fitness examinations. He should not only know about the initial but also about follow up examinations and their intervals and that a premature follow up examination can be arranged by himself or by his employer if necessary.

4.2.1.2 Relations between employer, medical adviser and driver
The physician who makes the examination is an adviser to both to the driver and to the employer but normally has no direct influence on the work contract. The quality of the assessment and thus the quality of the advice depends on the relation and a good communication between the parties. For the physician it is necessary that both driver and employer trust him.

4.2.2 The driver must be sure that -

- the safety of his job has a high priority
- potential risks for him and other participants in the traffic or work situations are assessed in a transparent and fair manner
- all details of the examination are treated confidentially
- he is given good advice regarding his health promotion
- the assessment is a correct and fair basis for his further employment

4.2.3 The employer must be sure that –

- he fulfils all the safety requirements in letting a worker drive vehicles or operate terminal plant
- risk factors for accidents due to drivers' health are minimized as far as this can feasibly be done by means of regular medical examinations

4.2.4 A clear communication between the employers' representative and the driver helps to clarify the relation between the driver and the physician. Rumours on the shop floor in the workplace about supposed health problems of a driver reaching the physician without a superior talking to the driver makes it more difficult to create a trustful relation between worker and physician.

4.2.5 Drivers' working conditions

4.2.5.1 A clear picture of the drivers' working conditions and the work environment in a port or at a terminal specifically is necessary for a physician to act as an adviser to the port industry. The information is especially needed if a driver cannot not fully meet the fitness requirements.

4.2.5.2 A risk assessment is the usual form of documentation for this kind of information.

4.2.5.3 Typical elements of a risk assessment of specific importance for drivers are:

- mechanical hazards - access to the cabin
- chemical hazards - fumes
- environmental hazards - climate, lighting
- physical hazards - noise, whole body vibrations
- physical hazards - posture, need to reverse, lack of physical variety, ergonomic cabin design
- mental work load - factors that influence mental fatigue, monotony, stress, task completeness, freedom from contradictions, cycle change, physical variety, use of qualification, anticipation, feedback,
- organisation - job rotation, teamwork, supervision
- working time - shift work, design of shift work, night work, flexibility of working hours, working overtime, breaks, 'job and finish arrangements'

4.2.6 Consideration of each individual case

4.2.6.1 Each driver should be looked at as an individual person with his/her individual skills experiences and a unique history.

4.2.6.2 The level of fitness a driver has to reach needs to be determined individually considering the type of vehicle or plant that shall be operated and drivers' experience in the job.

4.2.6.3 Quality and comprehensiveness of data that can be obtained from taking a history - drivers' signs and symptoms - is a matter of trust between driver and physician.

4.2.7 Resources to cope with impairments

4.2.7.1 Longstanding experience in assessing drivers' fitness shows that the vast majority of drivers clearly meet the requirements of the initial and of all follow-up examinations. With the small numbers that do not, additional steps are necessary to achieve a sufficient quality of the assessment. For example:

- advice to let the driver's personal house doctor certificate the driver's temporarily unfitness to work
- advice to see a specialist of another medical field e.g. an ophthalmologist
- identification of a treatment or rehabilitation programme that aims at meeting the standards
- assessment whether the driver can compensate for the consequences of his impairment given his specific experience in his specific work environment
- agreement on a restriction of a licence. The assessment could read 'no concern about driving under certain conditions'. A driver licence could be restricted to certain vehicles, or driving during daytime only for example.

4.2.8 Quality of feedback

4.2.8.1 The driver is the first person who should be given a direct feedback of the outcome of his fitness assessment to assure him about his adequate fitness status or to give him further advice.

4.2.8.2 The feedback to the employer has to consider that all personal pieces of data are confidential. The form of the feedback may be based on national or local regulations or on an agreement between employer and works council. Even the driver's declaration of consent to inform the employer may be necessary.

4.2.9 Dealing with the result of the assessment

4.2.9.1 A driver's fitness assessment is related to a part of a work contract between employer and driver. The physician gives advice to both. The last step of the procedure will be an agreement about the consequences for the further employment: either to continue the job of a driver or to allocate other tasks to the driver temporarily or permanently.

5. Medical standards for fitness to drive

5.1 Aim of the assessment of medical fitness to drive.

- accident prevention, prevention of critical incidents
- early recognition of health impairments which can be relevant for driving
- health promotion in general

5.2 Definition of "medical fitness to drive'

5.2.1 Medical fitness for driving means –

- fulfilment of certain requirements for visual and hearing acuity
- absence of certain disorders or stages of disorders

and

- resources to compensate for a functional impairment

5.3 Consideration of different types of vehicles or plant

With respect to fitness requirements, it seems sensible to differentiate between types of vehicles or plant. For example differences can be made between the following categories -

- driving industrial trucks with a drivers' seat or stand and with a lifting mechanism (e.g. fork lift trucks)
- driving industrial trucks with a drivers' seat or stand and without a lifting mechanism
- operating vehicle lifts (e.g. cranes)
- operating all gantry cranes and mobile cranes
- operating quayside ship to shore cranes
- operating ships' lifting appliances

5.4 Consideration of drivers' age

5.4.1 The age of drivers should be taken into account when planning the intervals between medical examinations – to give an example -

until age 40 years	every 36 to 60 months
from age 40 to 60 years	every 24 to 36 months
from age 60 years	every 12 to 24 months

5.5 Consideration of drivers' experience in the job

5.5.1 The experience of drivers in their jobs may be considered by applying different levels of minimum requirements for visual acuity at the initial examination and at follow-up examinations. The idea is that drivers' experience can compensate for a lower visual performance.

5.6 Schedule

5.6.1 Differences may be made between 'initial examinations' that take place before starting a job as a driver and follow-up examinations at regular intervals (see 5.4)

5.6.2 In addition there might be reasons for 'premature follow-up examinations' eg –

- after a prolonged period of being unfit for work (an illness lasting for several weeks) or when a physical handicap gives cause for concern about whether the work should be continued
- when beginning a new job
- in individual cases when the physician considers it necessary (e.g. when there is short-term concern about the person's health)
- if there are other indications which cause concern as to whether this kind of work should be continued.

5.7 Assessment criteria

5.7.1 Assessment criteria often are given in a standardised form to avoid violations of the necessary confidentiality of health data. The following terms may be used:

- no concern about health
- no concern about health under certain conditions
- short-term concern about health
- long-term concern about health

5.8 Requirements for the medical examinations (qualification, equipment, methods)

5.8.1 The medical examinations require a competent doctor or occupational health professional.

5.8.2 The equipment required is as follows –

- visual acuity (far and near range), three-dimensional vision, colour vision, visual field, scotopic vision, susceptibility to dazzle

5.8.3 Required elements of the medical examinations are -

- review of past history
- visual acuity in the far range
- visual acuity in the near range
- three-dimensional vision
- colour-vision
- visual field
- hearing (whispering and normal speech)
- scotopic vision, susceptibility to dazzle
- laboratory analyses (appropriate quality control)

5.9 Minimum requirements for visual and hearing acuity

6. Assessment of drivers with disorders (medical conditions)

6.1 Often drivers with disorders have to be examined. So the physician has to assess whether fitness to drive is influenced by functional impairments.

6.2 The emphasis is on cognitive functions necessary for driving -

- Attention
  Maintaining of attention towards the vehicle and the environment over a long duration of time is characteristic for driving but also separating targets from distractors and the concentration on upcoming critical situations is needed.

- Visuoconstructional skills

Accurately positioning the vehicle on a lane or under a container crane judging of distances and predicting the development of traffic situations - so called visuoconstructional skills – are needed.

- Executive functions
  Complex goal-directed activities like driving require supervision by the executive system of the brain (10).

6.2.1 With regard to checking cognitive fitness criteria, the examination 'fitness to drive' is just a screening instrument.

6.2.2 The medical adviser has to reflect -

- Does a driver suffer from a disease for which phases with cognitive impairments are characteristic? That would mean to assess the likelihood of a coincidence of such phases with the driving task (Epilepsy, Diabetes mellitus for example).

- Does a disease or the medicinal treatment of a disease directly impair cognitive functions? That could require an expertise based on neuropsychological tests.

6.2.3 Fitness to drive can also be questioned by disorders of the muscular-skeletal system. Unimpaired operating of pedals and steering wheels or a sufficient mobility of the spine are prerequisites to perform a driving task.

6.3 Epilepsy

6.3.1 "Any convulsive disorders, depending on the kind and frequency of the fits, the prognosis and the response to therapy" are listed among the reasons for concern about health.

6.3.2 The coincidence of a fit with a driving situation has to be prevented.

6.3.3 It is good advice to a medical adviser of the port industry to cooperate with the neurologist in attendance who will follow the guidelines of his medical society.

6.4 Diabetes mellitus

6.4.1 Hypo- or hyperglycaemic reactions with marked impairments of cognitive functions are among the acute risks during the course of the disease diabetes mellitus.

6.4.2 Long-term concern about health may be expressed for "persons with diabetes mellitus with marked variation in blood sugar levels, especially persons tending to hypoglycaemia".

6.4.3 If sufficient improvement is to be expected short-term concerns about health might be appropriate.

6.4.4 The physician might also come to the conclusion that there is "no concern about health under certain conditions" with respect to an individual driver suffering from diabetes mellitus.

6.4.5 'Under certain conditions' could mean –

- improvement of training and instructions
- improvement of the therapy including the compliance

- certainty of the management of hypoglycaemic reactions even in working conditions
- support from the driver's department (superiors supervisors colleagues)
- shorter intervals between follow-up examinations,
- restriction of a driver licence to day shifts e.g.

6.5 Medications

It is often reported that an impaired 'fitness to drive' is among the side effects of a medication. Therefore, long-term treatment with medicines which reduce fitness to drive is listed among the reasons for long-term concerns about health.

6.5.1 As the physician in attendance has to consider the driving job of his patient, the physician who assesses the driver's fitness has to consider whether the medication actually effects driving. The driver's history and neuropsychological tests, if necessary, can give reasons for the final assessment.

6.6 Alcohol

6.6.1 No doubt alcohol can impair cognitive functions – at a very early state the ability of self-criticism and the estimation of risks are negative influenced.

6.6.2 Supervisors play the dominant role in preventing accidents that are related to alcohol consumption – and it should be made clear that this is part of their responsibility.

6.6.3 Early detection of alcohol misuse in the setting of a driver's fitness examination is possible whenever taking a blood sample is or can be part of the examination. As this touches on the drivers' freedom from bodily harm, a clear agreement of all parties involved about such a procedure is necessary.

6.7 Drugs

6.7.1 Drug-dependence or other addictions are listed among the reasons for concern about health. Early detection is based on observed changes of the driver's behaviour.

6.7.2 It is expected that a physician making fitness examinations will detect and take notice of a possible consumption of so called 'illegal drugs'. That is not easy during a short contact between physician and driver. It should be much easier for supervisors and superiors who know of the driver's behaviour during a long period of normal working days.

6.7.3 A detection of metabolites with laboratory tests is possible, interpretation of the data with regard to safety can be difficult and often clear detailed agreements in the context of a comprehensive concept of prevention - a necessary prerequisite for the physician – cannot be reached.

6.7.4 Further information is expected from the project DRUID "Driving under influence of drugs, alcohol and medicines" (8).

6.8 Medications, alcohol and drugs affect not only employees' fitness to drive.

"The use of illegal drugs or the misuse of legal drugs or alcohol can significantly affect the safe performance of workers. This may affect the profitability of a company, irrespective of its size. Employees under the influence of drugs or alcohol can be a risk to themselves, fellow employees, customers and the public. Substance abuse by workers in the cargo-handling world can lead to potentially catastrophic consequences." (12)

6.8.1 That means a concept for occupational medical examinations and a workplace substance abuse policy overlap and have an influence on each other.

6.8.2 A workplace substance abuse policy - agreed between employers and employees or their representatives – as the concept of overriding importance may determine that drivers being checked for their fitness to drive are also drug and alcohol tested in the workplace.

7. Evaluation

7.1 Functional impairments are looked at as being potential risk factors for accidents. That is the rational for the examination of drivers' fitness in the framework of an accident prevention programme.

7.2 To what extent impairments or medical standards that are not fully met actually contribute to accidents is difficult to verify. A design consisting of two steps would be needed:

- the impairment or disorder (Diabetes mellitus e.g.) is present
- the impairment or disorder (hypoglycaemic reaction) is causal related to a given accident.

7.3 In addition for the estimation of risks, comparison groups are required (drivers with and without accidents). Such a design of accident investigations is hardly to realize in the port industry.

7.4 Accordingly, the concept of 'assessment of the fitness to drive' is based above all on the agreement of experts that it is a helpful instrument. In any case it is a useful instrument for a general health protection for the drivers who are involved.

8. Conclusions

8.1 The requirement that portworkers should be 'medically fit' 'to drive or operate terminal equipment or ship board lifting appliances can be and is checked in the framework of prophylaxis in occupational medicine. This pamphlet gives guidelines for the content as well as the procedure of examinations.

8.2 To be effective, medical examinations of drivers' fitness should be part of a holistic concept of accident prevention. Other components of such a concept are an adequate legal framework, safety oriented terminal layout, safe vehicles, supervision, training, instructions, accident reporting and analyses, workplace substance abuse policy and good communications.

8.3 Though medical examinations to check drivers' fitness have been practiced for decades and are well developed the concept remains partly vague, adopted from different traffic situations to the port environment und not well evaluated with regard to prevention of accidents.

Annex One

Minimum requirements for visual and hearing acuity (p253)

Parameter	Requirement level 1	Requirement level 2
visual acuity in the far range* - at the initial examination - at the follow-up examination persons with one eye	 0.7 / 0.5 or both eyes 0.8 0.7 / 0.5 (0.2**) or both eyes 0.8 only after a job-specific assessment 0.7	 0.5 / 0.5 (0.2)** or both eyes 0.6 0.4 /0.4 (0.2**) or both eyes 0.6 only after a job-specific assessment 0.6
visual acuity in the near range*	0.8 / 0.8	0.5 / 0.5
three-dimensional vision	three-dimensional vision sufficient for the job in question	
colour vision	colour vision sufficient for the job in question; if necessary, abnormalities to be investigated with the anamaloscope: no disorder in the red spectral range with an anomaloscope quotient less than 0.5***	
visual field	normal visual field perimetry at the initial examination; in persons more than 40 years old at every second examination at least	visual field adequate for the job perimetry given evidence of visual field defects
scotopic vision	only when requirements are above average without dazzle: contrast 1:2,7 luminance of surroundings 0.032 ccd/m² with dazzle: contrast 1:2,7 luminance of surroundings 0.1 ccd/m²	only when requirements are above average without dazzle: contrast 1:5 luminance of surroundings 0.032 ccd/m² with dazzle: contrast 1:5 luminance of surroundings 0.1 ccd/m²
Hearing acuity	whispered speech 5m	normal speech 5m

*If the given threshold values are attained with or without corrective appliances the appropriate occupational medical certificate is to be issued. However, if the examination does not reveal that the person has normal sight, he or she should be advised to see an ophthalmologist (not as part of the occupational medical prophylaxis) to establish whether optimal visual acuity could be achieved with corrective appliances, this should be recorded in the certificate.

**Visual acuity of 0.2 in the eye with poorer sight only acceptable when permitted by the workplace assessment

***For driving jobs not involving transport of persons which are covered by the Road Traffic Act, the stipulations of this Act apply unless the special internal company requirements for colour vision exceed those required by the Act.

Annex Two

Bibliography

1. Bundesanstalt für Straßenwesen (BASt) Germany
Begutachtungs-Leitlinien zur Kraftfahrereignung
Guidelines for expertises on driver aptitude (in German)
Mensch und Sicherheit Heft M 115
Bergisch Gladbach 2009

2. Canadian Medical Association (Editor)
Determining Medical Fitness to Operate Motor Vehicles
CMA Drivers' Guide, 7th edition
Ottawa 2006

3. Commission Directive 2009/113/EC of 25 August 2009 amending Directive 2006/126/EC of the European Parliament and of the Council on driving licenses

4, Department of Labor US (Ed.)
Occupational Safety and Health Administration (OSHA)
Federal Register 49 Code of Federal Regulations (CFR) 391.41 Subpart E
Physical Qualifications and Examinations
Federal Register 29 CFR 1917.27 Personnel

5. Diabetes and Driving in Europe
A report of the Second European Working Group on Diabetes and Driving,
an advisory board to the Driving License Committee of the European Union
Brussels, 2005

6. Directive 2006/126/EC of the European Parliament and of
the Council of 20 December 2006 on driving licenses (Recast)
Official Journal of the European Union 30.12.2006

7. Driver and Vehicle Licensing Agency (Editor)
At a glance – Guide to the current Medical Standards of Fitness to drive
Swansea UK 2009

8. DRUID Driving under the influence of drugs, alcohol, medicines
http://www.druid-project.eu

9. Epilepsy and Driving in Europe
A report of the Second European Working Group on Epilepsy and Driving,
an advisory board to the Driving License Committee of the European Union
Brussels, 3.April 2005

10. German Social Accident Insurance (editor)
Prophylaxis in Occupational Medicine
Guidelines for Occupational Medical Examinations
G 25 Driving, controlling and monitoring work
Stuttgart 2007

11. Health & Safety Commission (editor)
Safety in docks
Docks Regulations 1988 and Guidance
Approved Code of Practice (Regulation 11 (2, 3)
Guidance for medical practitioners on standards of fitness (Appendix 8)

London 1988

12. ICHCA, International Safety Panel Briefing Pamphlet No15
Baron, R.D. Substance abuse
Romford, Essex (UK), 2000

13. International Labour Office (ILO)
Code of Practice on Safety and Health in Ports
Genève 2005

14. Medical and physical evaluation guidelines for merchant mariner credentials
U.S. Department of Homeland Security, United Coast Guard, 2008

15. New standards for the visual functions of drivers
Report of the Eyesight Working Group
Brussels, May 2005

16. Snellgrave, Carol A
Cognitive screening for the safe driving competence of older people with mild cognitive impairment or early dementia
Australian Transport Safety Bureau (www. atsb.gov.au) no year