

# **ICHCA International Limited**



**INTERNATIONAL SAFETY PANEL**

**RESEARCH PAPER #10**

## **BACK PAIN**

**By**

**Steven Vereecke**

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### **About the Author**

Steven Vereecke is a 34-year-old osteopath D.O., living in Gooreind, nearby Antwerp, Flanders in Belgium. After his high school in science and sports he graduated as a physiotherapist in 1992. He then worked in his own practice for almost 10 years as a physiotherapist and at the Emergency Centre of the Port of Antwerp. He mostly treated there people after an industrial accident in the harbour. While he worked, he also studied to become a manual therapist and after that he started his six year studies to become an osteopath. He graduated as an osteopath D.O. in 2002. Due to his experience with the typical medical problems of the dockworkers, Hesse Noord Natie asked him to participate in their joint study with Medimar on how to prevent neck-and back problems for crane drivers. In 2003 he ended his job at the emergency centre to concentrate on the project involving the crane drivers. He has his own practice in the north of Antwerp where he works with 7 other medical therapists – psychologist, dietician, speech therapist, physiotherapists.

At this point, he's still active with more specialised training, such as Phytotherapy, a therapy based on herbs and mineral supplies, and orthomolecular medicine.

In addition to his own practice and the coordination of the project with Hesse – Noord Natie he is also a member of the Board of Examination for the Casuistic Examination of the Flanders College of Osteopathy.

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## **RESEARCH PROJECT ON BACK PAIN AMONGST CONTAINER CRANE DRIVERS**

### **1. INTRODUCTION**

- 1.1 In 2002 the stevedoring company Hesse – Noord Natie (HNN), based in Antwerp, Belgium, was confronted with a serious shortage of container crane drivers due to a very high level of absenteeism. The main reasons for this absenteeism were physical neck and back conditions of the drivers.
- 1.2 The company and its Service for Industrial Medicine were looking for ways to tackle the situation with the aim of reducing the causal conditions and decreasing this absenteeism. It was decided to develop a project to investigate the problem and find solutions.
- 1.3 This Research Paper details that project and its outcome and conclusions. The results achieved were astonishing.

### **2. ELABORATION**

- 2.1 The project was established in cooperation with HNN's Service for Industrial Medicine, "Medimar".
- 2.2 The company doctor made an evaluation of the situation and pinpointed the problem issues.
- 2.3 The sitting position while working in cranes was considered to be the root cause of the crane drivers' neck and back conditions. Medimar spent a lot of effort investigating how to improve the sitting position in cranes and provide a more ergonomic sitting position.
- 2.4 However, it was concluded that, in the short term, there were no options for alleviating the poor conditions and absenteeism by altering the sitting position in the cranes.
- 2.5 HNN contacted colleagues in other ports, who were all confronted with the same problem, and it was finally decided to start with a unique project.
- 2.6 To make sure that they had a correct view of the possible results, a roadmap was prepared, with different steps and physical examinations before and after the project.

### **3. INQUIRY**

- 3.1 The first step in the project was an inquiry to all crane drivers, asking them about their specific conditions. This inquiry was totally confidential and organised by the medical department of the port.
- 3.2 The inquiry asked questions on:
  - 3.2.1 Personal data
    - Height
    - Weight
    - Age
    - Years of experience working in cranes

- Medication
  - Possible sports and how many hours a week
  - Distances of over 50 km travelled in a car in a day
  - General well-being
- 3.2.2 Neck conditions
- Whether the crane driver had neck conditions or not
  - How long had the neck conditions existed
  - Frequency of neck-pain
  - Frequency on annual basis
  - How long did the period of pain last
  - Urgent blockages
  - Operations
  - Accidents
  - Restrictions of movement
- 3.2.3 Shoulder complaints
- (same questions as 3.2.2)
- 3.2.4 Lower back
- (same questions as 3.2.2)
- 3.2.5 Ergonomic profile
- Type of crane being operated
  - Whether the same crane is always operated
  - Number of hours per day spent “sitting”
  - Whether the work performed includes light physical efforts
  - Whether the work performed includes heavy physical efforts
  - Number of hours per month subjected to vibrations
- 3.2.6 Evaluation of the crane
- Comfort of sitting
  - Chair adjustments
  - Insertion of the chair in the cabin
  - Support for arms and feet
  - Control of the crane
  - Instruments
  - Noise discomfort
  - Vibrations
- 3.2.7 Personal discomforts
- Noise
  - Visibility
  - Working rhythm
  - Air conditioning
  - View on working situation, visibility of the working environment
  - Concentration
- 3.3 About 70% of the crane drivers replied. The responses led to profiles of the drivers which gave a clear view on the real problem issues.

#### 4. OBJECTIVES

- 4.1 There was more than one objective of this project.
- 4.2 Due to all the medical conditions, HNN was confronted with a serious problem of demotivation. Consequently, the objectives of the project were –
- First, HNN needed to improve morale
  - Next, it had to deal with the conditions leading to the absenteeism
  - Finally it also had to work on prevention to avoid future conditions developing.

## **5. PERSONNEL INTERVIEWS**

- 5.1 All crane drivers were invited in small groups for a talk with the dispatcher responsible for their operation. This talk included a discussion of all their working problems. The aim, in cooperation with the drivers, was to look for possible solutions or innovations.
- 5.2 These talks were very important to the crane drivers as they got the feeling that someone listened to them and understood their problems.

## **6. OUTCOME**

### **6.1 Adjustments**

- 6.1.1 When possible, small adjustments and repairs were made in the cranes, seats were repaired or replaced, air conditioning was adjusted, etc.

### **6.2 Seats**

- 6.2.1 In cooperation with a delegation of crane drivers, HNN looked for more suitable and better seats for its newly ordered cranes. They decided to go for the hanging chair supplied by Merford.
- 6.2.2 The new Merford Chair was chosen after an investigation involving the crane drivers, ergonomics and those responsible in PSA – HNN together with the port medical service.
- 6.2.3 24 cranes of PSA group in Antwerp have already been equipped with this type of seat. One old crane cabin has been rebuilt to put in the Merford Chair, but this is not possible for all of the older cranes. Crane cabins need to have both enough space and a strong roof construction to be able to accommodate it. The cost of the Merford Chair is about €11,000.
- 6.2.4 All new cranes will be equipped with the Merford Chair (see figures 1/2).

### **6.3 Therapy - consideration**

- 6.3.1 At the same time, HNN also looked for a therapy to decrease neck and back conditions in both the short and long term.
- 6.3.2 The inquiry showed that a lot of crane drivers had undergone therapy privately, in order to reduce their medical condition (physiotherapy, medication and traction table).

6.3.3 After a study of different therapies<sup>1</sup>, HNN and Medimar decided to go for osteopathy as being the most suitable choice. Osteopathy was medically accepted and when the financial and economic aspects were considered as well, it was thought to be the best therapy.

6.3.4 With osteopathy, crane drivers:

- Needed less therapy compared with other therapies
- Have less absenteeism
- Have higher labour contentment because they are no longer hindered when carrying out their job

6.3.5 Osteopathy was also the best choice financially as -

- Fewer sessions with the therapist were needed
- Osteopathy not only treated existing problems but also works in a preventative way.

#### 6.4 Therapy - methodology

6.4.1 The osteopath and Medimar organised information sessions for the crane drivers. In those sessions, the drivers were given an anatomical explanation of their conditions. It was also explained to them how to adjust their chair in a more ergonomic way.

6.4.2 The osteopath explained the principles of his therapy and gave examples of exercises to be done at home.

6.4.3 About 80% of the crane drivers attended these information sessions.

6.4.4 After this session, the company doctor performed a small medical examination in order to get a complete overview of all the medical conditions.

6.4.5 This was necessary to be able to evaluate the project afterwards.

6.4.6 All crane drivers had the option to make an appointment with the osteopath during the whole year of the study.

6.4.7 First phase consisted mainly in solving existing conditions. Crane drivers with existing conditions were given priority for treatment, so that they could perform their job again as soon as possible.

6.4.8 In a second phase, the osteopath was able to work on prevention of such conditions. In accordance with the general principles of osteopathy, all matters relating to the body that could eventually lead to conditions were solved.

6.4.9 Appointments were made on a voluntary basis but were paid for by HNN. However, the appointments had to take place before or after working hours.

6.4.10 Frequency of treatment was decided by the osteopath, in relation to the needs of the individual crane driver.

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## 7. RESULTS

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<sup>1</sup> Physiotherapy and traction table supervised by physiotherapist

7.1 After one year, a second inquiry took place

7.2 The results received were that –

- 45% of the crane drivers had osteopathic treatment.
- The osteopath had performed 286 treatments, with an average of 7 treatments for each crane driver
- 87% of the crane drivers said that they had good results from their treatment.
- 94.81% of the crane drivers had adjusted their seats with good results.
- 83.6% of the crane drivers carried out the exercises from the information sessions on a regular basis.
- In their private time, 60% of the crane drivers undertook more physical activities (taking the stairs, cycling etc).
- 51.6% of the crane drivers had adjusted their way of life in a positive sense (food, rest, sports etc).

7.3 All those actions led to enormous results –

- **50.5% decrease of neck and back complaints**
- **32% decrease in absenteeism**
- Three other important benefits were:
  - Acute problems received immediate treatment
  - There was an increase in labour contentment due to the decrease in adverse physical conditions
  - Due to the decrease of absenteeism, the pool of crane drivers did not suffer any more shortages, so there was a better distribution of the tasks.

## 8. SEQUEL

In September 2005, PSA – HNN started a similar project in Zeebrugge for the crane drivers for CHZ (Container Handling Zeebrugge). The crane drivers will be offered osteopathy and the ergonomic adjustments will be made to the cranes.

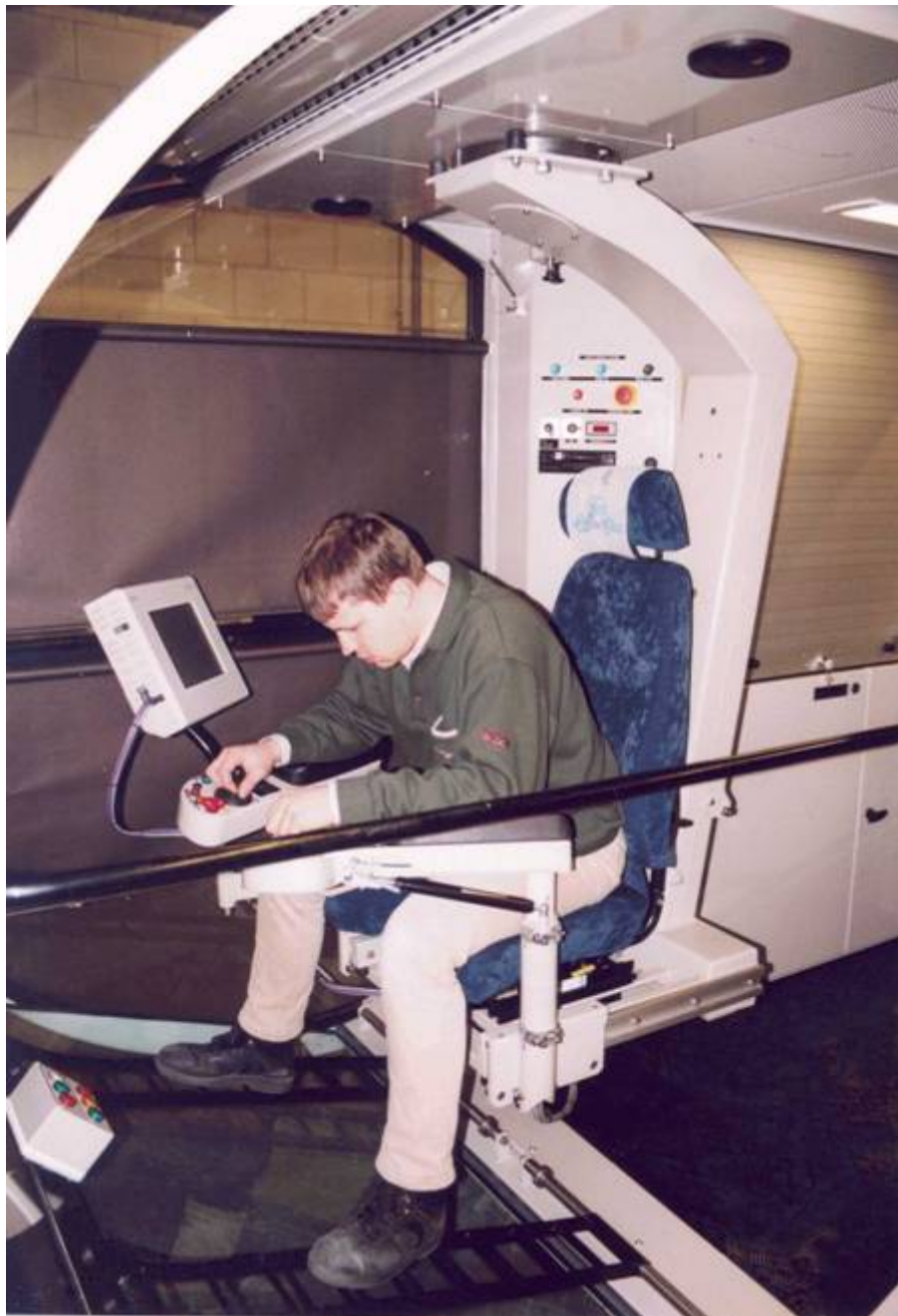


Figure 1 – the Merford Chair



Figure 2 – The Merford Chair