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GUIDELINES FOR 16 HOURS OPERATION

# INTRODUCTION

Today road transport plays a dominant role on the European freight scene and will continue to do so for the foreseeable future. It is therefore imperative to improve its efficiency and safety.

There are still many possibilities to achieve improvements by a better utilization of the available transport, loading and unloading equipment. One of these possibilities is to obtain optimal loading and unloading times all over the working day. Through greater flexibility with loading/unloading the utilization of the vehicles can be improved and in return contribute to reduce the ever increasing traffic congestion on our roads. Furthermore it will increase safety aspects on the road and will contribute to improve the environment. In order to investigate this subject a working group, consisting of representatives of the chemical and transport industry, was set up by EPCA/ECTA under the title "16 Hours Operation".

These guidelines are based on facts and findings collected by the Working Group and summarised in this document.

This topic was discussed between the transport and the chemical industry, but should not just be limited to them. It can be extended to all industries where large volumes of European road transport are used.



GUIDELINES FOR 16 HOURS OPERATION



The main objective is to evaluate the effects of longer loading times with the supplier and longer unloading times with the receiver, to find possible improvements for the whole traffic network and to eliminate heavy truck movements during the morning and afternoon rush hours – especially in overcrowded areas. This should be recognized by the EU as an effort made by the industry against the regular traffic jams on the roads and hopefully achieve a relief for the road transport industry.

### The "16 Hours Operation " will contribute to:

- reduction of road congestion.
- more heavy truck transports during the night hours.
- · less time-pressure on the drivers safety aspect.
- avoidance of waiting times.
- better use of transport loading and unloading equipment.
- reduction of empty mileage.
- reduction of overtime for rush-orders.
- increase of job speed.
- · better on-time delivery.

# Fact Findings

### **Opening for loading**

A research at 133 loading places of the chemical industry all over Europe brought the following data:

42% of the loading points are open for maximum 8 hours daily.
66% of the loading points are open for less than 11 hours daily.
33% of the assessed companies do not open until 08:00.
37% of the loading points stop loading at 15:00.
53% of the loading points stop loading at 16:00. *see Appendix 1* -

### **Opening for unloading**

A research at 403 unloading places with the customers of the chemical industry all over Europe brought the following data:

53% are open for up to 8 to 8,5 hours.
62% do not open until 08:00.
27% do not unload after 15:00;
73% do not unload after 17:00. *see Appendix 2 -*

### **Opening Cleaning Stations (for bulk transports)**

The opening hours at most of the cleaning stations are in accordance with the demand of the transport companies.

80 % are open from 07:00 until 18:00.10 % are open from 06:00 until 22:00.Peak hours are mainly in the early morning and as from 11:00 until 14:00.

### Transport distances

An example of an important German chemical producer shows the following average distances:

50 % up to 500 km 39 % between 501 and 1000 km 11 % between 1001 and 1500 km 70 % national 30 % international The transport time is in most of the cases from day A to day B and only a part of the driving time is during the night hours.

### Drivers day

The result of an investigation of a typical drivers day is shown in Appendix 3. A representative number of drivers in Germany, Benelux and France have reported over a 4 week period all details regarding driving, loading, unloading, cleaning and breaks. In addition to that data from drivers of multi-modal units working on domestic routes have been included. -see Appendix 3 -

The typical cycle of a drivers working day is as follows:

- ready for unloading between 07:00 and 08:00.
- taking samples for analysis, waiting for the result (for bulk only).
- unloading.
- driving to the nearest cleaning station (for bulk only).
- waiting for cleaning as most of the silo truck arrive at that time.
- · driving to the next loading place.
- · loading of the cargo.
- · driving to the next unloading place.
- · and of course time for relaxing and sleeping.

### Start time of loading

An analysis of an important Benelux Chemical Company shows the 2 peaks in the morning and early afternoon - see Appendix 4 -

## Conclusions

For safety, environmental and quality reasons it is absolutely essential that wherever possible the loading and unloading times are adjusted to minimum 12 but better to 16 hours.

The most important area is the loading place. Shippers should be aware of the ever increasing stress and time pressure of the truck drivers to arrive in time for loading.

The time between the end of unloading at about 10:00 hours until the beginning of the next loading is between 4 and 8 hours depending on the distances, the traffic with very often heavy traffic jam and the lunch time of the driver. Therefore next loading can start from 14:00 up to 18:00 hours.

This shows that opening for loading until 15:00 and 16:00 hours is in many cases too early and puts the drivers under enormous time pressure.

If they arrive after the opening hours for loading they have either to wait until the next morning – or they have to drive to another loading place with longer opening hours, but with extra empty mileage and driving during the rush hours.

The investigation of the Working Group clearly shows that the peaks of the loadings are in the morning between 08:00 and 09:00 and between 13:00 and 15:00 hours.

It is therefore strongly recommended to the chemical industry to investigate their existing systems of opening hours in order to find out how they can contribute to the improvement of safety at loading and unloading points, and in transit, to improve environmental issues and the quality of an important step of the supply chain.

In addition to that the chemical industry should through their marketing and sales departments convince their customers (receivers of goods) to also investigate their existing systems of opening hours for unloading purposes. As more than 50 % of the unloading places are open only about 8 hours a day, there is a large potential for improvement. A great help for the drivers would be to start unloading as from 07:00 hours as well as the acceptance of the truck until at least up to 18:00 hours.

### Safety

Accidents do not just happen, they are caused !

About 80 – 90 % of the accidents are caused by the drivers. Many could be avoided if the drivers would not be under regular time pressure.

Time pressure comes from heavy traffic and traffic jams, unnecessary waiting times, rigid loading times and too early closing times at loading places.

An additional safety aspect is when workers in the loading area will have less stress and can work without time pressure in peak times when loading is possible in a longer period.

### Environment

When driving during rush hours the heavy trucks often stand in a traffic jam. This consumes additional fuel and therefore causes increased pollution to the environment.

When loading starts at 15:00 or 16:00 hours the trucks start their journey exactly during the rush hours.

If trucks arrive too late for loading at 15:00 or 16:00 hours they either have to wait for the next day (which is a loss of time) or will go to other loading places with longer opening hours – but they drive additional empty kilometres mainly during the beginning of the rush hours.

It must be an essential task for both the chemical- and transport industry to avoid empty mileage and therefore reduce additional congestions on the road and pollution of the environment.

### Quality

Every producer wants his product to arrive at his customer's site safely, as well as in good quality and on time. An important step in the supply chain is the transport. It is therefore an important contribution of the chemical industry to increase their loading times to help the drivers to arrive on time at the final destination.

### Costs

By implementing "16 hours operation" the costs of both chemical and transport industry are influenced. The impact varies as a function of loading location, geographical distribution of sales, transportation mode, infrastructure, and should therefore be considered on an individual basis.

Some relevant arguments should nevertheless be considered as follows :

- · better utilisation of loading equipment and infrastructure.
- better utilisation of transport equipment.
- · increased personnel costs for 2-shift loading operation.
- · reduction of over-time premiums for "rush order loadings".
- reduced empty mileage.
- reduced waiting times.

### **Final Statement**

Although visible to the members of the Working Group, the positive effects of the implementation of the "16 hours operation" cannot be translated in "hard figures" on an industry wide level.

The Working Group recommends not only each chemical and transport company but also the receiving partners to evaluate the opportunity of implementing the "16 hours operation", bearing in mind its impact on safety, environment, quality and costs.

These Guidelines should be distributed to the responsible people of the onsite supply chain management, to the marketing and sales departments of the chemical industry but also to the whole of the distribution industry;



Reference is made by the Working Group to two documents which both have also assessed the impact of prolonged opening hours at loading/unloading sites on the logistics supply chain, i.e. as follows :

- "Optimalisatie in de chemische logistieke keten Effecten van laad- en loswindows"

   Onderzoek van de Technische Universiteit Eindhoven, Faculteit Technische Bedrijfkunde in samenwerking met Akzo Nobel, Dow Benelux, DSM, ICI Holland en Shell Nederland - June 1995.
- "Identificatie van mogelijkheden tot energiebesparingen in transport in de logistieke keten"
   A report by NEA-Transport and Research Training July 2001

Both studies also concluded on the potential beneficial effects of increased loading/unloading windows on the whole supply chain as demonstrated by the "16 hours" Working Group.



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# Appendix 1 Opening for loading

### ECTA - 16 hours operation

### LOADING

| Number<br>of companies | %    | Number of<br>loading hours |
|------------------------|------|----------------------------|
| 1310%                  | < 7  |                            |
| 16                     | 12%  | 7                          |
| 26                     | 20%  | 8                          |
| 16                     | 12%  | 9                          |
| 9                      | 7%   | 10                         |
| 6                      | 5%   | 11                         |
| 6                      | 5%   | 12                         |
| 5                      | 4%   | 13                         |
| 9                      | 7%   | 14                         |
| 7                      | 5%   | 15                         |
| 6                      | 5%   | 16                         |
| 14                     | 11%  | 24                         |
| 133                    | 100% |                            |

| Number<br>of companies         | %                                    | Loading as from                      |
|--------------------------------|--------------------------------------|--------------------------------------|
| 11%<br>2<br>32<br>2<br>30<br>9 | 0:00<br>2%<br>24%<br>2%<br>23%<br>7% | 5:30<br>6:00<br>6:30<br>7:00<br>7:30 |
| 44                             | 33%                                  | 8:00                                 |

| Number<br>of companies | %<br>S | Loading until |
|------------------------|--------|---------------|
| 22%                    | 12:00  |               |
| 3                      | 2%     | 13:00         |
| 18                     | 14%    | 14:00         |
| 25                     | 19%    | 15:00         |
| 21                     | 16%    | 16:00         |
| 8                      | 6%     | 17:00         |
| 12                     | 9%     | 18:00         |
| 4                      | 3%     | 19:00         |
| 12                     | 9%     | 20.00         |
| 5                      | 4%     | 21:00         |
| 9                      | 7%     | 22:00         |
| 14                     | 11%    | 24 00         |
| 133                    | 100%   |               |

### Loading with timeslots

| 25  | 19%  | yes |
|-----|------|-----|
| 108 | 81%  | no  |
| 133 | 100% |     |

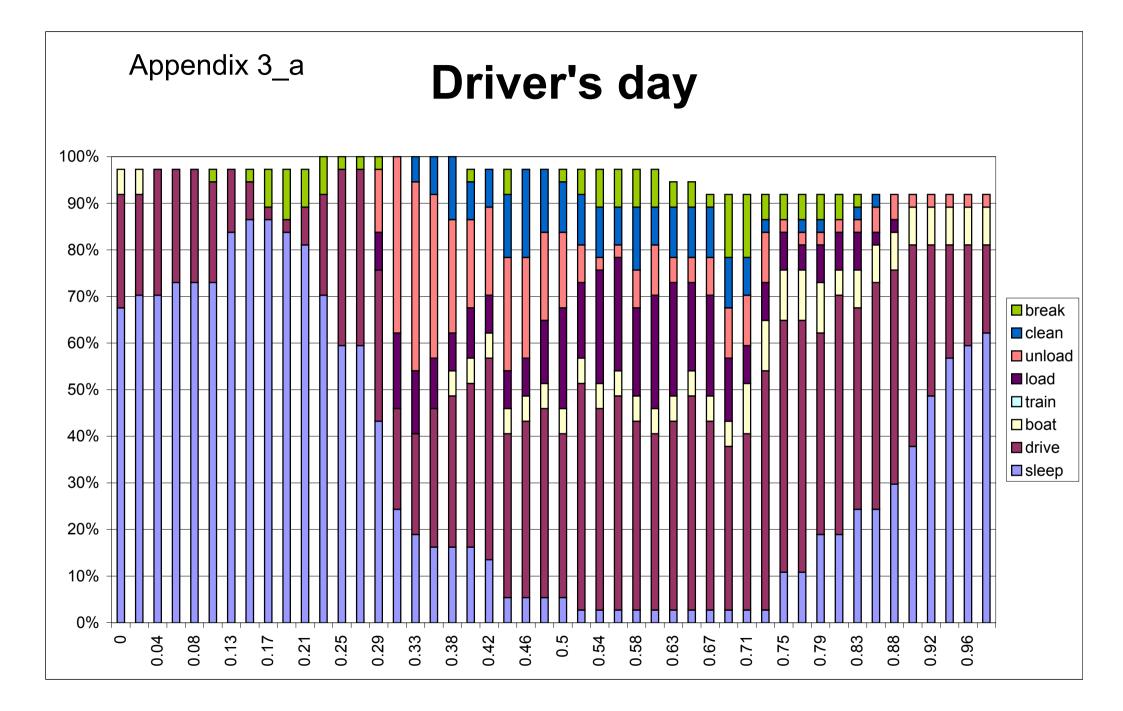
# Appendix 2 Opening for unloading

### ECTA - 16 hours operation

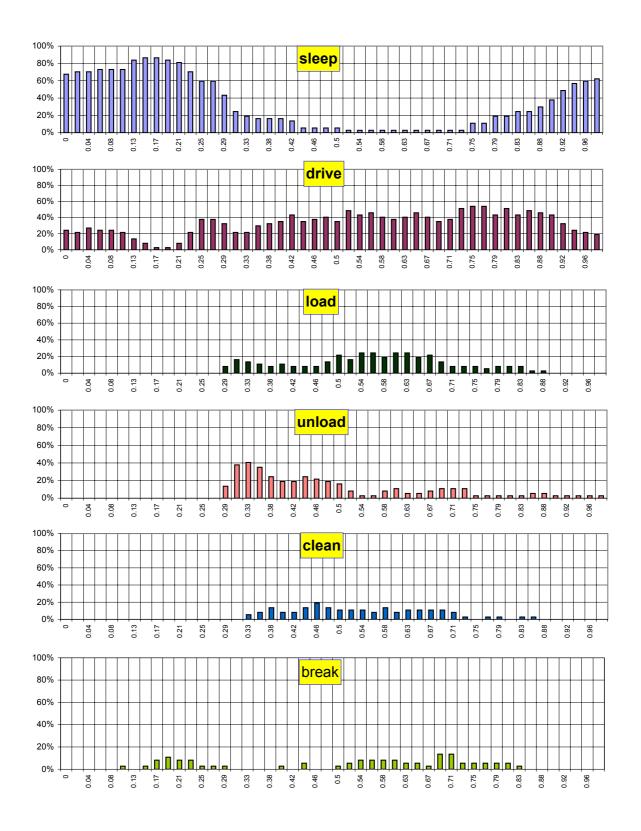
### UNLOADING

| UNLOADING              |        |                              |
|------------------------|--------|------------------------------|
| Number<br>of companies | %      | Number of<br>unloading hours |
| 24                     | 6%     | < 6                          |
| 27                     | 7%     | 6 - 6 3/4                    |
| 51                     | 13%    | 7 - 7 3/4                    |
| 108                    | 27%    | 8 - 8 1/2                    |
| 69                     | 17%    | 9 - 9 1/2                    |
| 38                     | 9%     | 10 - 10 1/2                  |
| 12                     | 3%     | 11                           |
| 14                     | 3%     | 12 - 12 1/2                  |
| 3                      | 1%     | 13                           |
| 5                      | 1%     | 14                           |
| 2                      | 0%     | 15                           |
| 9                      | 2%     | 16                           |
| 1                      | 0%     | 18                           |
| 40                     | 10%    | 24                           |
| 403                    |        | Number of                    |
| Detail in perce        | entage | unloading hours              |
|                        | 26%    | < 8                          |
|                        | 44%    | < 10                         |
|                        | 12%    | < 12                         |
|                        | 18%    | 12 - 24                      |
| Number<br>of companies | %      | Unloading<br>as from:        |
| 44                     | 11%    | 0:00                         |
| 1                      | 0%     | 5:00                         |
| 34                     | 8%     | 6:00                         |
| 38                     | 9%     | 7:00                         |
| 10                     | 2%     | 7:30                         |
| 253                    | 62%    | 8:00                         |
| 11                     | 3%     | 8:30                         |
| 10                     | 2%     | 9:00                         |
| 1                      | 0%     | 10:00                        |
| 1                      | 0%     | 11:00                        |
| 403                    |        | I                            |
| Number<br>of companies | %      | Unloading<br>until:          |
| 6                      | 1%     | > 12:00                      |
| 13                     | 3%     | 12:00                        |
| 11                     | 3%     | 13:00                        |
| 28                     | 7%     | 14:00                        |
| 51                     | 13%    | 15:00                        |
| 110                    | 27%    | 16:00                        |
| 78                     | 19%    | 17:00                        |
| 33                     | 8%     | 18:00                        |
| 11                     | 3%     | 19:00                        |
| 9                      | 2%     | 20:00                        |
| 3                      | 1%     | 21:00                        |
| 8                      | 2%     | 22:00                        |
| 42                     | 10%    | 24:00                        |
| 403                    |        |                              |
|                        |        |                              |

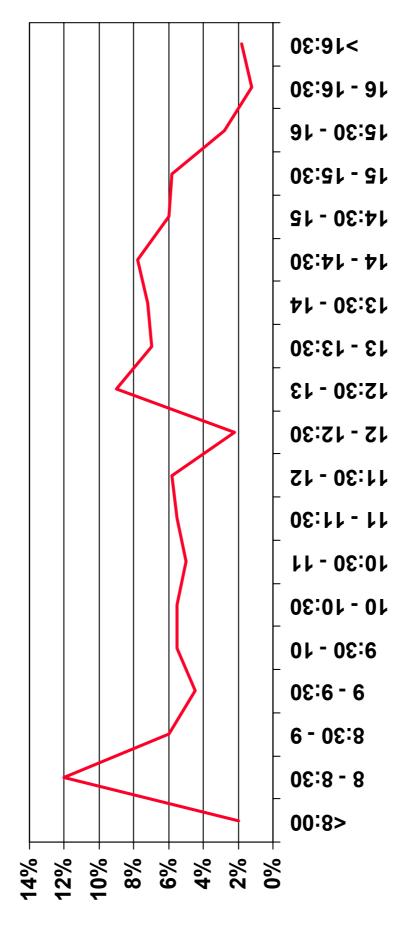
GUIDELINES FOR 16 HOURS OPERATION



### APPENDIX 3 b



# Loading start time analysis



APPENDIX IV





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