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**Topic:** Freight and city logistics

**Submission date:** 2006

**Name of measure/service etc:**

Quiet night deliveries,  
a complementary solution for the foods sector  
in Barcelona

**Location:** Barcelona, Spain

**Initiator and partners:**

Barcelona Municipality & Supermarkets Operators (Mercadona & Condis)

**Short description of the activity:**

The Municipality of Barcelona developed a system for quiet night deliveries in collaboration with two supermarket operators, Mercadona and Condis. The pilot projects showed that this initiative works and has good results: benefits in terms of reduced delivery times and associated lower transport operating costs. The city benefits from lower congestion and a reduction in emissions associated with stop-start driving.

**Background and objectives:**

B:SM has progressively assumed the role as traffic enforcement agency for the Municipality – initially operating tow-away trucks and storing deposited vehicles, then managing traffic wardens to enforce reserved on-street spaces for goods deliveries as well as paid on-street parking in the central area. The policy to facilitate goods movements constitutes the 9<sup>th</sup> of the 10 objectives of the city's Mobility Pact. Within this policy framework, Barcelona Municipality realised trials concerning more flexible goods delivery (notably, collaborations with operators of the foods sector concerning quiet night deliveries) and has utilised the Green Area scheme to channel an improved and more-extended allocation of reserved goods delivery spaces combined with better spaces enforcement.

Barcelona is engaged in a Mobility Pact that has the following ten goals:

1. Achieve high-quality, integrated public transport
2. Maintain road-user speeds, improving the speed of surface public transport
3. Increase surface area and quality of space destined for pedestrian use
4. Increase the number and quality of parking spaces
5. Improve information for citizens and road users
6. Improve road safety
7. Promote the use of less-polluting fuels and control noise and air pollution
8. Promote the use of bicycles as a regular means of transport

9. Achieve an agile and orderly distributions of goods and products, and
10. Apply regulations and new technologies to support the other goals.

Within the two last goals the *Quiet night deliveries – a complementary solution for the foods sector* initiative is developed to provide better conditions for delivery of foodstuffs, avoiding morning congestion.

### **Implementation:**

The first night-time quiet delivery trial was made at the Mercadona supermarket in Valencia Street in 2003, with an adapted 40T truck. To do this, the Municipality had to introduce experimental traffic regulations. Traffic police collaborated with the Municipality to measure noise levels in residences close to the supermarket sites. The trials with 40T trucks were extended to 5 other locations around the city during 2004. In addition to the adaptations to the vehicles (electric lift, insulating carpet and adaptations for access using electric fork lift), staff were trained to realise the unloading operations using a set of procedures aimed at minimising verbal communication and other noise.

Not all operators have premises as large as those operated by Mercadona, and some supermarkets located on local roads cannot be serviced by large trucks. For these reasons, the Municipality has realised further trials in collaboration with Condis Supermarkets using a fleet of 15T IVECO trucks (again with electric lifts and insulating carpets, but with plastified roll containers - instead of fork lift).

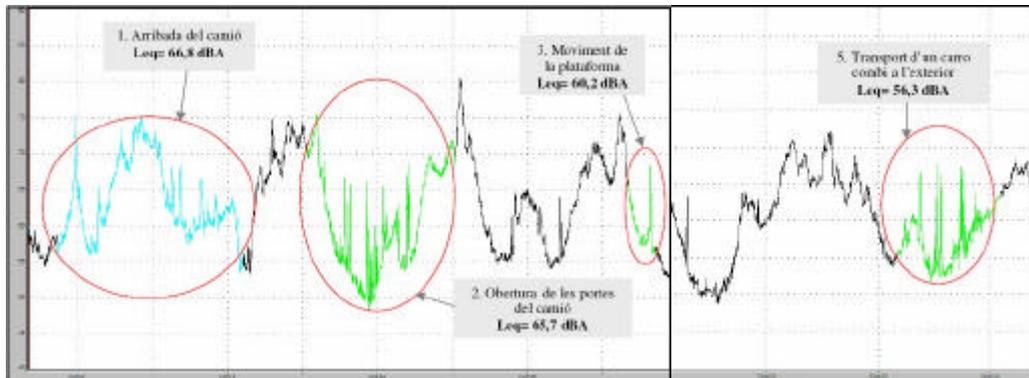


**Picture 1: Quiet night-time unloading using adapted 15T truck at Condis' Aragó St outlet.**

### Pilot with adapted 40T trucks

The results obtained in the initial trials with 40T trucks is quantified in terms of noise measures compared to ambient noise levels on nights when the delivery was not being made; the average of the minimum values recorded during unloading inside buildings (23.5 dB(A)) was 0.3 dB(A) greater than those recorded before loading started; for maximum values no difference was recorded for measurements inside buildings (33.4 dB(A)), and the maximum values recorded in the street varied by only 0.1 dB(A), average with unloading of 52.2 dB(A).

## Pilot with adapted 15T trucks



**Picture 2: Noise measurements at Condis' Aragó St outlet showing lower noise levels during unloading operations (green) compared to engine noise on arrival (blue) and during other moments (black). Source: Barcelona Noise Unit, 2006.**

### **Conclusions:**

The delivery characteristics in the trial with 40T trucks indicate that 2 trips/week at night can save 7 trips using smaller lorries during day-time traffic.

Operator Mercadona estimates that full investment in vehicle adaptation is recoverable within 3 years. This is based on a generalised operation across Spain at some 115 outlets.

The trials with Condis show similar benefits in terms of reduced delivery times and associated lower transport operating costs, with a cost recovery within 18 months.

The city benefits from lower congestion and a reduction in emissions associated with stop-start driving.

However, the necessity of ensuring noise remains below ambient levels means that exemptions are being made on a limited 6-month basis, and subject to analysis of the city's noise complaints register.

### **Contact person for more information on the project:**

Francesc Narváez, Mobility Councillor, BCN Municipality

Telephone: +34 93 4923362

[fnarvaezp@bcn.cat](mailto:fnarvaezp@bcn.cat)

Alfredo Morales i González, Director General, B:SM

Telephone: + 34 93 409 22 70

Fax: + 34 93 409 20 42

[amorales@bsmsa.es](mailto:amorales@bsmsa.es)