

Noise Management at Barcelona-El Prat Airport

Exploring Novel Approaches for Aviation Noise Management

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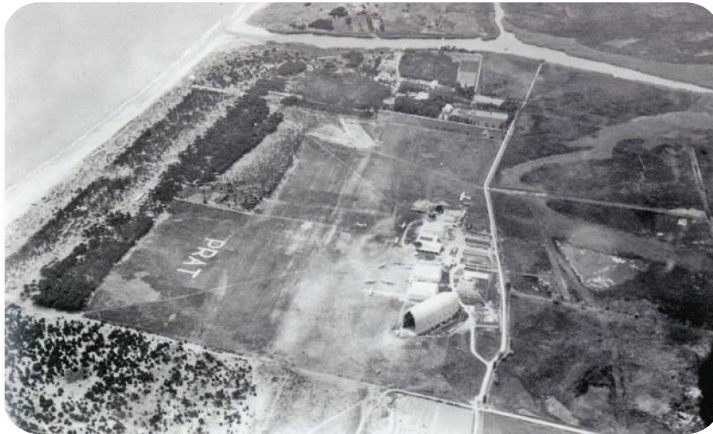
BACKGROUND



REGULATORY BACKGROUND

YEAR 2002:

The Environmental Impact Statement of the Barcelona-El Prat Airport expansion project (January 2002) included different actions such as the New Runway, New Control Tower and a New Terminal Area.



Aerodrome El Prat (1923)



Barcelona- El Prat Airport (today)

Condition 3^a "Measures to protect the population affected by the noise impact":

All these measures to protect the population affected by noise shall be approved by the Commission for Environmental Monitoring of the Airport Expansion Works (CSAAB).

REGULATORY BACKGROUND

YEAR 2004:

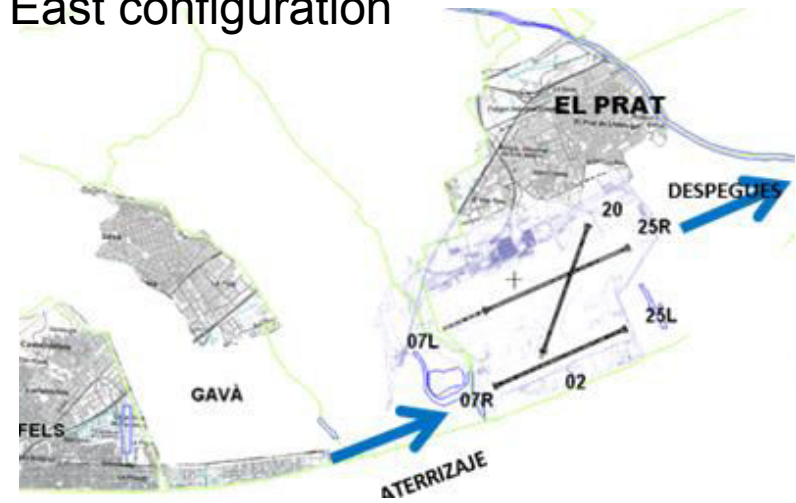
The third runway (07R-25L) of the Barcelona-El Prat Airport began operations in September 2004.

After the first days of usage of this new runway, the neighboring communities requested measures to minimize the noise effects produced, due to the overflight of Gavà in approach by the 07R (East configuration).

YEAR 2005:

Creation of the Noise Technical Working Group dependent on the CSAAB, SCOPE → study proposals and initiatives for possible actions aimed to improve noise exposure around the airport.

PLANNED (2004) East configuration





NOISE MANAGEMENT

CHANGE OF RUNWAYS USE. DAYTIME

WEST CONFIGURATION

PLANNED RUNWAYS USE

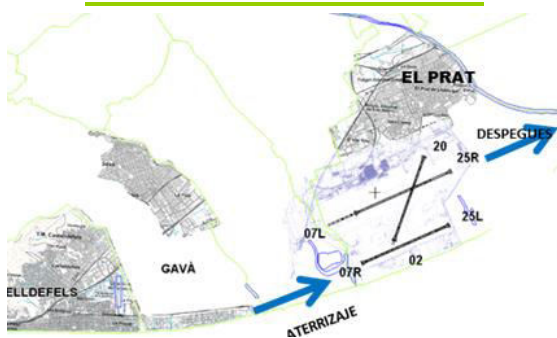


CHANGE OF RUNWAYS USE



EAST CONFIGURATION

PLANNED RUNWAYS USE



CHANGE OF RUNWAYS USE



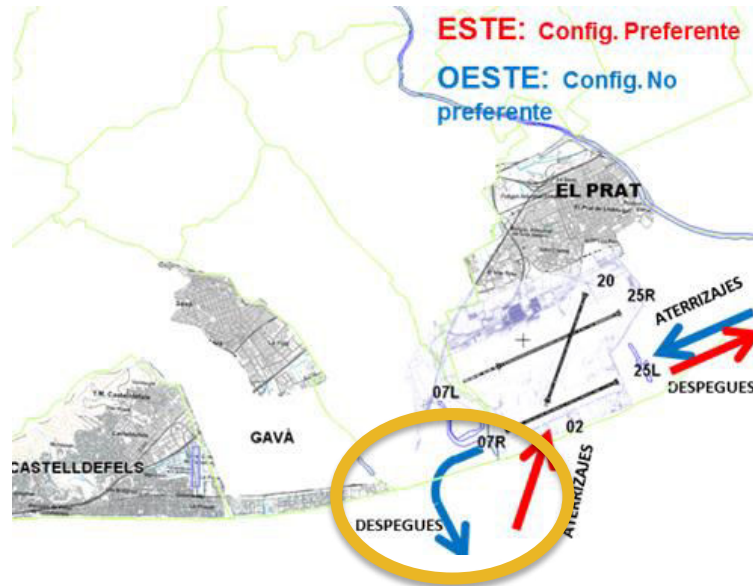
CHANGE OF RUNWAYS USE. NIGHT TIME

EAST AND WEST CONFIGURATION

PLANNED RUNWAYS USE



CHANGE OF RUNWAYS USE

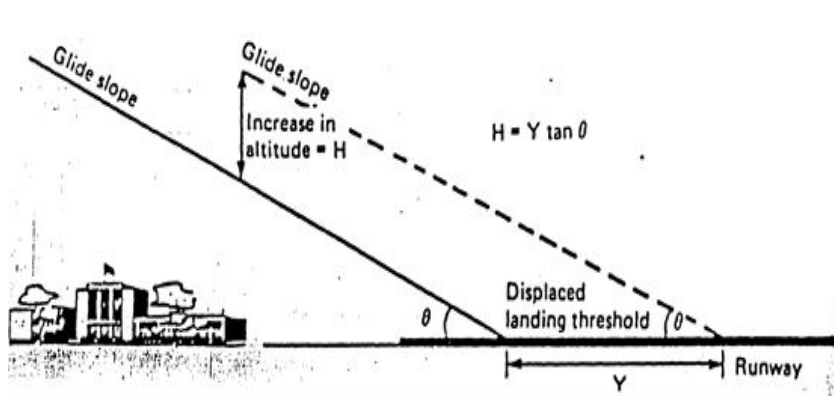


OTHER NOISE REDUCING MEASURES

In addition to the preferential configurations described before, Barcelona airport has established, sometimes even within the scope of the CSAAB, other noise reduced measures: :

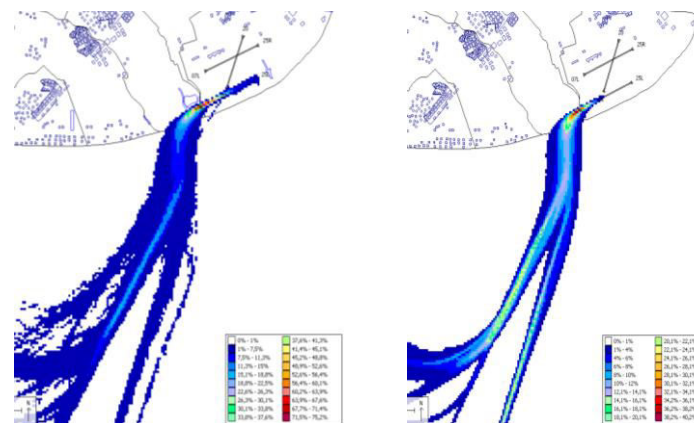
Displaced threshold

Improvement of the acoustic quality of the surroundings of the cities Castelldefels and Gavà, by increasing the height of the aircraft path with respect to the non-displaced threshold



Design and optimization of paths (RNAV)

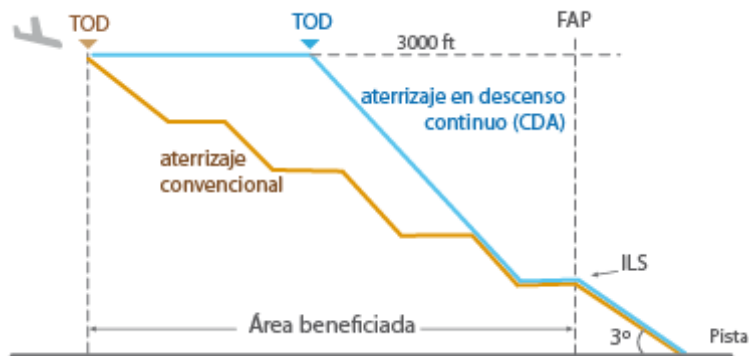
It allows reaching levels of dispersion around the nominal trajectory much lower than those that occur on conventional systems, increasing the efficiency of an optimal path



OTHER NOISE REDUCING MEASURES

Procedures in continuous descent approach (CDA) during night hours

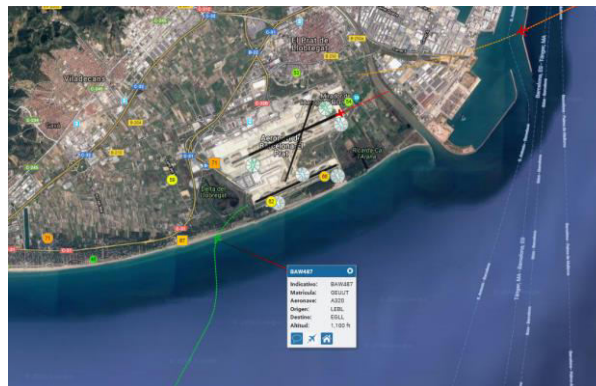
At the request of the pilot, arrivals procedures in continuous descent (CDA) shall be facilitated for noise abatement reasons



NOISE ABATEMENT PROCEDURES

RWY 25L: The initial turn prescribed in the SID shall begin no later than reaching 500 ft altitude.

Aircraft must follow the nominal trajectory of SID until they have reached 6000 ft., unless they are over the sea, above 3500 ft., in ascent and moving away from the coastline or at more than 3 NM from the coast and in parallel to it.



OTHER NOISE REDUCING MEASURES

- ✓ **EXTENSION OF THE USE OF NIGHT TIME PREFERENTIAL CONFIGURATION**
- ✓ **NOISE INSULATION SCHEME**
- ✓ **RESTRICTIONS TO MARGINALLY CONFORMING AIRCRAFT**
- ✓ **NOISE AIRPORT CHARGE**
- ✓ **LIMITATIONS ON USE OF AUX POWER UNITS (APU)**



IN ORDER TO ENSURE THE APPLICATION OF ALL THESE MEASURES, A MONITORING OF THEM IS CARRIED OUT, GUARANTEEING THE MINIMIZATION OF NOISE IN THE ENVIRONMENT



COMMUNITY ENGAGEMENT

COMMUNITY NOISE GROUPS

ENVIRONMENTAL MONITORING COMMISSION OF THE EXPANSION WORKS OF BARCELONA AIRPORT (CSAAB)

COMPOSITION:

- Ministry of Environment
- Civil Aviation Authority
- Aena and Enaire
- Generalitat de Catalunya
- Representatives from city councils of El Prat de Llobregat, Viladecans, Gavá, Sant Boi de Llobregat, Barcelona and Castelldefels .

AIM:

Monitoring and control the compliance of the preventive, corrective and off-setting measures developed during the construction and operation phase of the Barcelona Airport Expansion project.

MORE DETAILS

Created: year **2003**

Number of meetings: **52**

Periodicity: when the presentation or approval of measures or studies is need



COMMUNITY NOISE GROUPS

NOISE TECHNICAL WORKING GROUP (GTTR)

COMPOSITION :

Technicians appointed by the members of the CSAAB belonging to the Ministry of the Environment, Civil Aviation Authorities, Aena, the regional government of Catalonia and representatives of the city councils.

AIM:

Studying proposals and initiatives for possible actions aimed at improving noise exposure around the airport

MORE DETAILS

Created: **year 2005**

Number of meetings : **56**

Periodicity: **every 3 months**

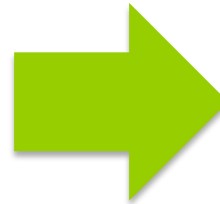


Both commissions are linked and all members are informed promptly about noise data, configuration changes or exceptional situations that arise at the airport

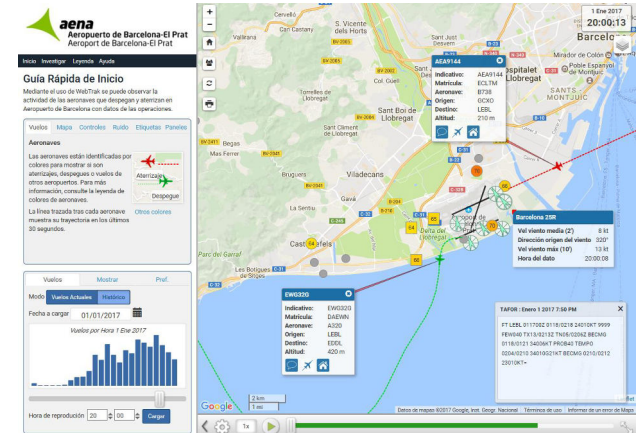
MEASUREMENT AND TRANSPARENCY

NOISE MONITORING SYSTEM (NMS)

Control system which detect, measure and compile the noise produced by aircraft that fly over microphones installed in strategic locations in the surrounding areas of airports.



INTERACTIVE NOISE MAPS (WebTrak): A tool to provide people living near airports with reliable and transparent information on aeronautical operations and their acoustic levels.



WEBTRAK



Inicio Investigar Leyenda Ayuda

Guía Rápida de Inicio

Mediante el uso de WebTrak se puede observar la actividad de las aeronaves que despegan y aterrizan en Aeropuerto de Barcelona con datos de las operaciones.

Vuelos Mapa Controles Ruido Etiquetas Paneles

Aeronaves

Las aeronaves están identificadas por colores para mostrar si son aterrizajes, despegues o vuelos de otros aeropuertos. Para más información, consulte la leyenda de colores de aeronaves.



La línea trazada tras cada aeronave muestra su trayectoria en los últimos 30 segundos.

Vuelos Mostrar Pref.

Modo Vuelos Actuales Histórico

Fecha a cargar 01/01/2017



Hora de reproducción 20 00 Cargar

AE9144

- Indicativo: AEA9144
- Matrícula: ECLTM
- Aeronave: B738
- Origen: GCXO
- Destino: LEBL
- Altitud: 210 m

EWG32G

- Indicativo: EWG32G
- Matrícula: DAEWN
- Aeronave: A320
- Origen: LEBL
- Destino: EDDL
- Altitud: 420 m

Barcelona 25R

- Vel viento media (2'): 8 kt
- Dirección origen del viento: 320°
- Vel viento máx (10'): 13 kt
- Hora del dato: 20:00:08

TAFOR : Enero 1 2017 7:50 PM

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FT LEBL 011700Z 0118/0218 24010KT 9999
FEW040 TX13/0213Z TN05/0206Z BECMG
0118/0121 34006KT PROB40 TEMPO
0204/0210 34010G21KT BECMG 0210/0212
23010KT=
    
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COMPLAINTS CHANNELS

The screenshot shows the Aena website's 'Environmental Care Office' page. At the top, there's a navigation bar with 'environment' selected. Below it, a sidebar lists various environmental topics. The main content area includes a title, a brief description of the office's purpose, a list of services (Requests for information, Claims/Complaints, Suggestions), and a 'make enquiry' button.

OTHERS AIRPORTS 2017:
HEATHROW: 78.794 noise complaints
LUTON: 15.330 noise complaints
SCHIPOL: 21.700 noise complaints

FIGURES 2017 BCN

1.224
environmental complaints

99,9 % related to noise.

46% of the complaints are from the same family

CEM: A COLLABORATIVE WORKING GROUP

COLLABORATIVE ENVIRONMENTAL MANAGEMENT (CEM)

The concept of Collaborative Environmental Management (CEM) was developed by **EUROCONTROL** in order to combine the needs expressed by the different stakeholders and to find common solutions to the environmental challenges that arise in airports.



MEMBERS OF WORKING GROUP



Airports involved: MAD + **BCN**
Topics: **noise** and climate change

Thanks