



# CODE OF GOOD PRACTICE

## PLAN

### **The Marseille-Provence Airport Environmental Code of Good Practice for air traffic.**

*This text is applicable under normal working conditions for the airport. In the case of non-normal situations the code's practices cannot be guaranteed.*

- A – Introduction
- B – General principles
- C – The Civil Aviation Authority (DGAC)
- D – The Airlines
- E – Air Traffic Controllers Trade Unions
- F – Pilots Unions
- G – Airport Authority
- H – Specific Information for Marseille-Provence
- I – New fields of research
- J – Follow up mechanism of the Code of Good Practice

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## **A – Introduction**

The Consultative Commission for the Environment charter, proposed on the 7<sup>th</sup> of February 2002, was designed principally to control noise generated at Marseille-Provence Airport. The commission identified the need for an environmental code of practice for the air traffic in and around the airport. The Air Traffic Service actors, signatories of the charter, agreed to actively pursue the charter's objectives. They have drawn up this Code of Good Practice in full awareness of the vital importance that respect for the environment will have on the long term development of commercial aviation .

Their own safety and that of the population in overfly zones is the principal objective of these signatories and this must not, in any circumstances, be compromised by noise abatement.

## **B - General Principles**

As mentioned in the introduction to the Chicago Convention, « the development of civil aviation...can surely help to create friendship and understanding between the peoples and nations of this world ». These objectives are still a reality but changes in both air travel and urbanisation have reached a stage that noise levels, and the related disturbance felt by the population living in over-fly zones, must be controlled.

The principle on which this **Code of Good Practice** is based is the voluntary and shared commitment by all to a common objective : a resident-friendly noise environment around Marseille-Provence Airport. The code consolidates the commitments made by the signatories: to promote it at all levels in their organisation and at every stage of their operations.

Safety is and remains the main priority for all those involved in aviation. However, the signatories agreed that control over noise pollution was and remains a major factor in the long-term environmental impact of air transport.

They agree that by co-operation and openness they can, on the one hand, provide data and make proposals to the Airport Noise Pollution Control Authority (ACNUSA), and on the other hand, study resulting proposals for the reduction in noise emissions and the limiting of its effect on the environment and in particular noise abatement procedures for take-off and landing.

The ways in which aircraft noise is perceived from the ground depends on multiple factors, the most important of which are:

- Type of aircraft, type of engine, all-up weight, height and speed

- Piloting procedures as followed by the air crew. These are given in each companies flight operations manual which is based on the operating procedures laid down by the aircraft constructor and approved by the certification board;
- Air traffic procedures as laid down by the state authority (Civil Aviation Authority), the DGAC, and following the International Civil Aviation Organisation (ICAO) recommendations;
- Heading, level and speed instructions given to aircrews by ATC in compliance with published procedures and in accordance with safety, traffic flow and air traffic scheduling requirements
- Weather conditions that affect aircraft performance, trajectory, sound footprint and active flight procedures.

As to how the nuisance factor is perceived, it is not only the result of the above factors but equally the materialization of the noise energy in relation to ambient noise, noise element frequencies, and the subjective appreciation of each individual.

It is based upon these general principles that the following commitments were made by the signatories.

## **C - The Civil Aviation Authority (DGAC)**

The DGAC, the official regulatory body for air traffic safety in France, ensures that during initial and in-service pilot and controller training programmes, emphasis will be placed on the effect of noise on the airport environment resulting from pilot behaviour and air traffic control actions. In this context, the DGAC guarantees that the interest of all parties will be respected.

The DGAC will, in co-operation with aircraft manufactures and operators, study the best working practices that produce minimum noise emissions during approach, landing and departing phases and guarantee maximum safety. It is endeavouring to promote the use of these methods by airline operators and their pilots and ensure that they are taken into account by the designers of air traffic procedures and the controllers who implement them. A regulatory framework is being set up, in partnership with the signatories, that will take into account changes in technology and in particular the data bases used for on-board navigation.

At present, Air Traffic Services have as sole objectives:

- 1) prevent collision between aircraft in flight
- 2) prevent collision between aircraft or with obstacles on the ground
- 3) to facilitate and organise air traffic flow
- 4) to provide useful advice and information enabling safe and efficient operations
- 5) to advise the appropriate services when an aircraft is in need of assistance from search and rescue and to assist these services as appropriate

Within an international context, the DGAC is reinforcing its participation in working groups, both within the European zone and with the ICAO, and is thus able to anticipate international decisions and apply them at local level. It is also studying airport environment measures taken by neighbouring countries.

## **D - The Airlines**

Signatory airlines are promoting, through their operating procedures and suitable training policies, a noise emissions control strategy. They are keeping aircrew up-to-date on the latest developments in airport operating procedures.

### **Fitting of modern navigational equipment in airline fleets**

In order to follow procedures accurately, signatory airlines are looking at the best and most economical way of equipping their fleets with modern, efficient, on-board navigational systems, thus facilitating the flying of published procedures hence with a significant reduction in deviation tolerance from the prescribed track

Particular attention is paid to the standard of the data-bases supplied for these systems, to evaluate them particularly when they are used in conjunction with environmental noise emission standards.

### **Co-operation in development**

Signatory airlines are taking part in studies, depending on their ability to do so and the needs expressed, that will lead to progress in noise management through improvements to air traffic flow around the airport.

### **Development of suitable operating standards**

With mixed traffic operations noise emission levels vary, to a certain extent, as a result of individual operator's working methods. This is one of the reasons why the signatories are taking an active part in the DGAC study programme. As a result of these studies, and based on their experience, they will define operating procedures for departure, approach and landing that reduce noise whilst remaining within certification limits (e.g. speed changes during the approach, best time for extending gear and lowering flaps.

They will incorporate the corresponding standards into their respective operating manuals for use by their crews whenever safety considerations are met and ATC permits.

Individual company operating policies are drawn up in consultation with Professional Pilot Associations to further the application of noise abatement practices.

### **Dealing with complaints**

Operators are taking an active part in dealing with complaints. They provide all relevant information, concerning flights that are the object of a complaint, to the airport complaints service .

To avoid delay in answering complaints they are dealt with by telephone, fax, "e"mail or post. The replies ensure the anonymity of aircrews concerned. In fact, this anonymity is essential to guarantee the workability of this Code of Good Practice.

Operators inform the aircrews concerned of any complaints dealt with by the airport environment department.

Operators inform their aircrews of the analysis and the measures taken as a result of complaints by local residents.

## **E - Air traffic controller Trade Unions**

The air traffic controller trade unions signatories recognise that, without compromising safety, respect for the environment should remain a major objective for Air Navigation Officers. They agree that all their partners in aviation should integrate these recommendations not only in the planning stages (design of procedures, etc.) but also in real-time operations.

Air traffic controllers trade unions represent extensive resources in skill and experience, particularly in the fields of safety and operating capacity. They have taken part, from the outset, in the studies and experiments carried out in the field. They make sure that the planned measures are workable on a daily basis without causing work station overload or compromising safety. They advocate that the procedures, elaborated in co-operation with their members, are followed.

## **F - Professional Pilot Trade Unions**

These signatory associations are aware that respect for the environment is an unavoidable element in the future development of air transport. However, noise abatement should not in any way compromise the pilot's primary concern, that of the safety of both the passengers and local residents.

Through their involvement in committees, commissions and charters that have dealt with the noise environment, the pilots associations openly contribute to the reduction of noise pollution.

These associations have access to a very extensive pool of experience and skill in the fields of operations and their limitations. This expertise allows for active participation in studies and trials that are carried out, and enables them to make sure that new procedures are workable on a daily basis without overloading the aircrew and compromising safety. They will take an active part in future trials from their conception to their conclusion.

## **G – Airport authorities**

The Marseille – Provence Chamber of Commerce (CCIMP), in co-operation with all those in air transport, is searching for means to limit airport noise in accordance with the European Directive , 26<sup>th</sup> March 2002, that seeks to introduce operating noise level policies that take into account both economic and operational considerations

This step consists of a cost-benefit analysis that will probably result in restrictions on planned operations due to the airports particular characteristics.

The airport authorities have at their disposal reliable data on noise origin thanks to the setting up, in September 2004, of an automatic aircraft noise emission measurement network in the vicinity of the airport. Results from the system are published regularly.

The airport authority also agrees to refer to these tools when replying to complaints from local representatives, residents and resident associations.

## **H – Specific Information for Marseille-Provence**

### **H.1 General**

The Marseille-Provence Civil Aviation Authority and the SNA-SSE, responsible for providing the air traffic services, in co-operation with the airline operators, air traffic controller unions, pilot briefing officers and pilots, are developing an air traffic plan that has an environmental focus on the reduction of perceived noise emissions particularly at night.

Marseille-Provence airport has a number of notable topographical and climate characteristics. These, together with the sharing of the surrounding airspace between civil aviation and the military, has led to the choice of specific procedures and operating methods.

Any new actions will take into account these characteristics and environmental constraints while at the same time giving the highest priority to safety.

All work carried out is discussed between all the partners and is validated by them.

### **H.2 – Airport characteristics**

#### **H.2.1 Topography**

Design of instrument approach and departure procedures is made difficult by high ground to the South and East of the field.

Most of the parameters required to carry out a study are determined by the presence of this high ground.

#### **H.2.2 Climatology**

Prevailing winds are from the North hence 70% of landings and take-offs are on a Northerly heading. The conjunction of the winds and the Estaque hills can cause serious turbulence and wind-shear with high wind gradients throughout a final approach from the South. Visibility is usually excellent.

Low visibility can require the use of low visibility procedures (LVP) for between 20 and 30 days per year.

#### **H.2.3 Aerodrome description**

Marseille-Provence has two runways and a network of taxiways.

In close proximity to the aerodrome boundary there are areas of dense population. It is therefore necessary to take into account aircraft noise emissions generated both on the ground and in the air.

## H.2.4 Airspace organisation

The hoped for flexibility to be able to optimise air traffic procedures and enable noise emission reduction is hindered by the presence of military traffic zones within, and in close proximity to, the Marseille-Provence control centre (CCAMP) air space.

## H.2.5 Urban zones affected

The city of Marseille stretches 10 NM to the South East of the field. It is situated in the approach and departure airspace volume. In order to minimize noise disturbance a minimum overfly height of 5000ft is imposed.

Apart from Marseille, towns and villages can be found within a radius of 10 NM of the airport:

- along the extension of the runway centre line
- around the Berre lake
- South West of the field (Blue Coast)
- to the East of the field

Along the extended runway centre line lie the towns, Berre to the North and Saint-Victoret to the South,. These two towns are affected by either landings or take-offs, depending on the runway in use.

Around the Berre lake there is a medium density population composed mainly of detached houses. For these dwellings the principal noise disturbance is generated by visual procedures (IFR, VFR aircraft and helicopters).

The two main towns to the East of the field are Vitrolles and les Pennes Mirabeau .They cover a fairly large area but most of the inhabitants live in dense urban areas. As for the rest there is the Realtor plateau which is ideal for aircraft manouvres as it is sparsely inhabited. Air traffic procedures can avoid the main areas of population as they are in concentrated areas. Vitrolles is the only town affected by take-offs to the South and this to the North and East of the town.

To the South and South West of the field, on the Blue Coast, there are numerous small villages with sparse population. This does not facilitate the design of clear air traffic procedures that are clear of dwellings.

## PRINCIPAL URBAN AREAS AFFECTED

- 1-BERRE-L'ETANG
- 2-ST-VICTORET
- 3-VITROLLES
- 4-LES PENNES-MIRABEAU

- 5-ENSUES-LA-REDONNE
- 6-MARSEILLE L'ESTAQUE
- 7-MARSEILLE ENDOUME



## H.3 – The DGAC and Air Traffic Procedures

*Where safety is in question the CCAMP air traffic controllers are not committed to the recommendations cited below.*

### H.3.1 Aircraft ground movement

Most ground movements take place to the East of the runways.

The worst noise pollution comes from engine testing and use of auxiliary power units (APU).

These procedures are covered by the French AIP (AD2 LFML TEXT4). Operators and their pilots comply with these recommendations.

A European study is being carried out on the use of APU's and on the possible replacement by a fixed base electrical energy supply.

The flight briefing office is doing its best to co-operate in preventing noise emissions.

### H.3.2 IFR aircraft (Instrument Flight Rules)

#### H.3.2.1 Standard initial departures (SID's)

Urban areas are taken into account when designing SID's. It is, of course, sometimes difficult to avoid overflight of dwellings along the extended runway centre line particularly under the initial climb.

The reduction of noise emissions from the SID's was one of the parameters taken into account in the design phase by Marseille-Provence airport thus avoiding, wherever possible, built-up areas.

All the current SID's are tested periodically.

The SID trajectories are grouped as much as possible and thus avoid the dispersion of the noise footprint.

As a consequence, ATC does not authorise any deviation from the published SID's below FL50 except in the following cases:

- for departing aircraft over the sea or over the Berre lake
- for radar separation

#### H.3.2.2 Standard arrivals (STAR's)

STAR's will be at the highest altitude possible. However, they must be compatible with:

- sequencing
- instrument approach procedures
- flying the aircraft

#### H.3.2.3 Instrument approaches

There is a close correlation between a correct execution of an instrument approach and the instant ATC delivers the associated approach clearance.

To give an example, for an ILS 32R procedure, execution of the interception of the ILS axis on final turn can be disrupted if the height and speed maintained by the pilot, or delivered by ATC, are too high.

Once authorised, the aircraft's configuration (altitude, trajectory, speed) should allow the approach to be carried out, subject to traffic density, in as fluid a manner as possible to avoid power setting changes (erratic use of air brakes, sudden power reductions).

#### **H.3.2.4** Visual approaches

The success of a low disturbance visual approach depends, principally, on the piloting of the aircraft.

A visual approach clearance should be given as early as possible to enable the pilot to set up the aircraft in the best possible configuration to follow the planned track.

In 2003 an "Environment-APPVUE" chart was published by the DGAC for Marseille-Provence. The chart appears in the AIP Atlas IAC and includes mandatory instructions.

#### **H.3.3 VFR aircraft**

VFR flights, either day or night, have not been the subject of complaint.

**H.3.4 Helistop** The compatibility between fixed wing and helicopters, on final approach, initial departure or on the ground, will be improved by the building of the helistop. Once the building is completed, final approach for helicopters on a Northerly heading will be further to the East, hence avoiding Saint-Victoret town centre with a corresponding reduction in noise disturbance.

#### **H.3.5 Night operations**

##### **H3.5.1** Ground movements

Only authorised engine tests may be carried out between 22h00 and 07h00. In real time this authorisation is given by the **CCAMP Senior ATC supervisor** (AIP FRANCE AD2 LFML TEXT4).

**H.3.5.2** Runway use is in accordance with the Environmental Charter, Action 5 (Take-offs to the North and landings South).

In the middle of the night when traffic is low and with adequate meteorological conditions, take-offs are made to the North and landings to the South. This procedure and the traffic limitations that it imposes are under consideration with a view to improvement. (cf. AIP FRANCE AD2 LFML TEXT4)

**H.3.5.3** Suppression of approaches from the South/South West of the field when runway 32 is in use.

Visual approaches from the South/South West overfly a number of scattered towns. As a result, aircraft landing on a North heading cannot use the visual approach procedure between 23h00 and 06h00 local time.

### **H.3.6 Working practices**

The Comité Local d'Environnement Permanent (CLEP), issue of the Comité Technique Paritaire (CTP) of the Service de Navigation Aérienne Sud Sud-Est (SNA-SSE), will meet on a regular basis to examine the repercussions of the Code of Good Practice on the work methods of ATC.

### **H.3.7 Improvements to procedures**

Improvements to instrument procedures are an on-going necessity.

The SNASSE's DGAC staff will take the necessary steps to follow this up.

The remodelling of the middle level instrument approaches and departure paths will be made within this framework. It is from this project that we can expect, apart from a general improvement of air traffic services, a reduction in the number of flights that pass over Marseille and the airport's surrounding areas at the middle heights of between 3000 and 10000ft.

However, the extensive high ground under the Southern approach cone, avoidance of flying over Marseille city and the final descent gradient for 32 of 7% all represent serious constraints for planning.

All the signatories agree that, with the present state of the art, there is no alternative to final approaches being made on the extended centre line for 32R and 32L.

## **H.4 - Aircraft operators**

### **H.4.1 Commercial flights**

#### **H.4.1.1 Information and flight safety**

*Where safety is in question pilots are not required to follow the recommendations cited below.*

#### **H.4.1.2**

Minimum disturbance should be attained if pilots keep to optimum flight parameters throughout all phases of the flight.

### **H.4.2 General aviation**

#### **H.4.2.1 Flight over inhabited areas**

In addition to regulatory limitations (1957 ruling, VAC charts and ATC clearance) for altitude and tracks, general aviation pilots should avoid flying over gatherings of people or dwellings.

**H.4.2.2** General aviation pilots should take note of instructions and information given in AIP-France, particularly concerning training flights and circuits.

### **H.4.3 Helicopters**

#### **H.4.3.1 Infrastructures**

At Marseille-Provence, helicopters use designated taxiways for landing and taking-off operations. These taxiways provide the necessary manoeuvring area required for these operations.

#### **H.4.3.2 Eurocopter**

The company Eurocopter is the main helicopter operator at the airport.

The recommendations for helicopter operations to be followed in this Code, further to already existing agreements, are still to be established.

### **H.4.4 Aircraft not subject to the Code of Good Practice**

Operators of aircraft dedicated to special operations expect their pilots to adhere to the Code. However, they can cease to follow the recommendations if they judge it necessary for operational reasons or safety.

## **H.5 The Airport Authority (Marseille-Provence Chamber of Commerce (CCIMP))**

In liaison with the DGAC, the CCIMP will, whenever necessary, take part in setting up steps to bring to the pilot's and airline operator's attention the need to respect current air traffic procedures and environmental recommendations.

The relevant departments of the CCIMP are able to take part in studies and experiments with a view to improving the current procedures following the installation of noise emission measuring stations around the airport.

The CCIMP is well placed to work with the DGAC, on noise abatement, as one of its advisors is a Captain who operates from the airport on a regular basis.

## **H.6 – Handling and maintenance companies**

Handling and maintenance companies keep their clients informed of the environmental constraints for Marseille-Provence.

Moreover, they will inform the operators of the noisier types of aircraft, which on the spot measures they should take for noise reduction.

They should put aircrews unfamiliar with the airport in touch with the flight briefing office straight away.

## **I – New fields of research**

This Code of Good Practice is a dynamic document. The search for noise environment quality depends not only on the above actions but equally on a critical evaluation of their consequences in terms of safety, capacity and noise pollution. Further, as awareness of “*the noise environment quality*” develops in the aviation world, new ideas and techniques appear and these should be tried, tested and applied so that the demonstrated results allow progress in the quality of the noise environment in and around Marseille-Provence Airport.

Approximately once a year the Air Navigation Services of the South East (SNASSE) and the CCIMP organise professional meetings between specialists, pilots, controllers, designers and planners of air navigation procedures, to:

- have exchanges of technical information, particularly with foreign airports of a similar size to Marseille-Provence on practices and procedures used to maintain the quality of the noise environment;
- make a quantitative assessment of current measures and adopted practices of this Code of Good Practice;
- examine new proposals put forward at these meetings;
- look into needs in terms of training or information relating to the setting up of new rules or procedures that result from these proposals.

These meetings form a suggestion base. Procedures and techniques that, as a result of these meetings, may eventually be set in motion, should follow the standard procedure of technical evaluation, consultation, dialogue, information and verification of conformity with the applicable rules and regulations.

## **J – Follow-up mechanism for the Code of Good Practice**

As can be seen above, the work of civil aviation professionals, signatories of this Code, is under constant and steady change. This work is dependant on progress made in relation to the technical means employed in running the airport and in managing traffic changes. This is why it was necessary to define, within this Code, basic principles that are inviolable.

The signatories agree to meet periodically, at least once a year, to assess the application of the Code and to study possible modifications. Each appraisal will be presented to the Consultative Commission on the Environment.