

## DATA SUMMARY

## LOCATION

Date and time	<b>Saturday, 9 April 2011, at 12:59 UTC<sup>1</sup></b>
Site	<b>Menorca Airport (LEMH), Maó (Menorca)</b>

## AIRCRAFT

Registration	<b>EC-IJS</b>
Type and model	<b>Bombardier-CL600-2B19 CRJ 200</b>
Operator	<b>AIR NOSTRUM</b>

## Engines

Type and model	<b>General Electric CF34-3B1</b>
Serial Number	<b>2</b>

## CREW

	Pilot in command	Copilot
Age	<b>46 years old</b>	<b>41 years old</b>
Licence	<b>ATPL(A)</b>	<b>ATPL(A)</b>
Total flight hours	<b>11,391:58 h</b>	<b>5,642:33 h</b>
Flight hours on the type	<b>8,267:50 h</b>	<b>5,294:48 h</b>

## INJURIES

	Fatal	Serious	Minor/None
Crew			<b>3</b>
Passengers			<b>39</b>
Third persons			

## DAMAGE

Aircraft	<b>None</b>
Third parties	<b>None</b>

## FLIGHT DATA

Operation	<b>Commercial air transport – Scheduled – Domestic passenger</b>
Phase of flight	<b>Approach and landing</b>

## REPORT

Date of approval	<b>25<sup>th</sup> July 2012</b>
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<sup>1</sup> All times in this report are in UTC unless otherwise specified. To obtain local time, add two hours to UTC.

## 1. FACTUAL INFORMATION

### 1.1. History of the flight

On 9 April 2011 at around 13:10 UTC, a CRJ200 aircraft, registration EC-IJS and callsign IB8884, operated by Air Nostrum, landed on runway 01L at the Menorca Airport (LEMH) with 39 passengers onboard. The flight had originated in Madrid. The runway used for the landing had been closed due to construction since 10 February 2011. The runway in use was 01R/19L. Visibility conditions were CAVOK<sup>2</sup>. At the time of the landing there were two workers on the runway installing runway edge lights. There was also a vehicle alongside. There were no injuries to the passengers or crew and the aircraft was undamaged.

### 1.2. Personnel information

#### 1.2.1. Aircraft crew

The captain, 46, was a Spanish national and had a valid and in force airline transport pilot license (ATPL(A)) and CRJ-100 rating. He also had a valid and in force class 1 medical certificate. He had a total of 11,391:58 flight hours, of which 8,267:50 had been on the type.

The copilot, 41, was a Spanish national and had a valid and in force airline transport pilot license (ATPL(A)) and CRJ-100 rating. He also had a valid and in force class 1 medical certificate. He had a total of 5,642:33 flight hours, of which 5,294:48 had been on the type.

Both had taken the training courses approved for the operator in accordance with the EU OPS.

#### 1.2.2. Crew's statement

The crew stated that they had taken off from Madrid at the scheduled time and had flown along the planned flight route. The copilot was the pilot flying (PF) during the flight.

When they transferred to Palma control, and after listening to the ATIS<sup>3</sup>, they were told that runway 19L was in use and cleared to fly straight to the Menorca VOR. Once in contact with the Menorca Airport, the crew requested wind information, which ATC reported as being variable at 4 kt. The crew asked ATC if, once the runway was in sight (ATIS had reported CAVOK conditions), they would be able to land on runway 01 instead of 19 so as to shorten their approach. The tower cleared them to make a visual approach to runway 01 and informed them they were first to land and that another aircraft was on approach behind them.

<sup>2</sup> CAVOK: Ceiling and Visibility OK. Clear skies and visibility in excess of 10,000 m.

<sup>3</sup> ATIS: Automatic Terminal Information Service.

The crew thus assumed that they were cleared to land on runway 01L, and that is how they recall acknowledging ATC. Once established on final and with the field in sight, the crew, seeing the runway free from obstacles and with nothing to indicate that it was closed (unlike in other airports, where a runway closed marking is displayed at the threshold with something like a trolley, marks in the shape of an X, along with red lights), proceeded to land.

The tower instructed the crew to exit the runway to the right. It was then that the crew realized that the exit was closed off by red and white barriers. They were under the impression that the controller had not noticed the mistake either. They were able to taxi to the apron without incident once the barriers were removed by a signalman.

Once at the stand, the crew contacted the controller and asked if he had noticed that they had landed on runway 01L, to which the controller replied that he had initially been unable to ascertain what runway they were landing on. By the time they were close to landing, he chose not to force them to go around.

### 1.3. Aircraft information

#### 1.3.1. General information

The aircraft, registration EC-IJS, is a Bombardier CL-600-2B19, serial number 7706. It has a maximum takeoff weight (MTOW) of 23,133 kg and is equipped with two General Electric CF34-3B1 engines. The aircraft had valid and in force registration and airworthiness certificates, as well as the relevant insurance and noise limitation certificates.



Figure 1. Photograph of the aircraft<sup>4</sup>

<sup>4</sup> Image taken from [www.planespotters.net](http://www.planespotters.net)

### 1.3.2. *Flight dispatch documentation*

The NOTAM and destination airport information included in the flight dispatch documentation and used by the crew was consistent with that published by the airport (see Section 1.7), and made reference to runway 01L/19R being closed, runway 01R/19L being operational, the ILS/DME on both thresholds of runway 01L/19R being out of service, as well as to the corresponding runway exits being closed.

The 12:30 ATIS information Whiskey (W), written down by the crew, also indicated runway 19L as being in use.

## 1.4. **Meteorological information**

The weather information applicable to the Menorca Airport at the time of the incident was as follows:

METAR LEMH 091000Z 23004KT 170V280 CAVOK 22/06 Q1018

This means that at the Menorca Airport on 9 April, the horizontal visibility was in excess of 10,000 m and the wind was at 4 kt from 230°.

## 1.5. **Aerodrome information**

The Menorca Airport (LEMH) is 4.5 km southwest of the city of Maó, at an elevation of 302 ft. It has two parallel runways designated 01L/19R and 01R/19L. They are 2,550 and 2,100 m long, respectively.

The airport confirmed that on the day of the incident, both ILS were turned off. This status matched that recorded on that day's Operations Department report.

### 1.5.1. *AIP and NOTAM information*

Runway 01L/19R was undergoing repairs on the day of the incident. This work was noted on the AIP Supplement, reference SUP 23/10 (see Appendix A). As part of the third phase of this repair work, it was estimated that runway 01L/19R (the main runway) would be closed from 2 March 2011 until 12 April 2011, and that runway 01R/19L would be used for operations.

According to the information in the AIP, runway 01R/19L is used only for contingencies. A NOTAM must be issued prior to placing it in service. Under normal circumstances, the runway is used to taxi.

The relevant NOTAMs published included:

FROM 08/04/2011 09:19 UNTIL 14/04/2011 05:00 B2637/11  
REF SUP 23/10 RWY01L/19R CLSD.  
RWY01R/19L OPERATIONAL FM 11-FEB-11 0600  
FROM 08/04/2011 09:29 UNTIL 14/04/2011 05:00 E1280/11  
RWY01L ILS/DME CAT I OUT OF SERVICE

The NOTAMs informed that from 8 to 14 April, runway 01L/19R would be closed, that 01R/19L would be operational starting on 11 February and that the runway 01L ILS was out of service.

### 1.5.2. *Information from the duty manager*

The report drafted by the duty manager on the day of the incident included the following:

"13:01 UTC, IB8884, flight involving an Air Nostrum CRJ2000, EC-IJS, from Madrid with 38 pax and 1 FA onboard, landing on 01L.

RWY01L/19R has been closed to traffic due to construction since 10 February. 01R/19L has been in use since 11/02/2011 06:00 UTC. No damage to persons or property. The airplane completed thru-flight normally and continued with its schedule.

At the time of the incident there were two workers installing runway edge lights, as well as a vehicle alongside the runway. They were not affected.

Weather conditions were perfect: CAVOK and no chance of glare.

Work on the main runway (RWY01L/19R) is almost complete. Calibration flights are scheduled for Thursday, 12 April. The runway is scheduled to return to service on 14 April."

This report also referenced the publication of the relevant AIP Supplement and the NOTAMs that notify of the runway closing, the fact that the maintenance work and associated measures taken<sup>5</sup> had been reported to the airlines by email and the horizontal marking displayed on the closed runway in accordance with ICAO Annex 14.

### 1.5.3. *Information on the runway-closed marking*

The airport reported that the horizontal runway-closed markings used consisted of ten x-shaped symbols, two painted on the displaced runway thresholds and eight made of

<sup>5</sup> On 8 February 2011, the airport's Operations Department sent an email to the affected airlines, including Air Nostrum. The content of the message was as follows: For your information, due to pavement repair work, next Thursday, February 10 the airport will, at the conclusion of that day's operations, close the main runway (01L/19R) and place the contingency runway (01R/19L) in service. As a result, on Friday, 11 February, the contingency runway will be in use.



**Figure 2.** Landing marks, first from right gear and then from left, near the fourth runway-closed marking

cloth on the runway (see Appendix C, Diagram of the runway-closed markings and information on runway-closed signs).

The airport also reported that, as the result of a safety recommendation issued by CEANITA<sup>6</sup> in 2009, Aena's Operations and Network Systems Office had instructed the Menorca Airport to be in strict compliance with the Operating Instruction on improving operational safety: "Aspects involving the configuration and maintenance of the air field (EXA 47)" (see Appendix D). Specifically, Section 5.1 details the steps and methods to be taken to disseminate runway closing information to users in advance and outlines mitigating steps to prevent the non-communication of said information.

## 1.6. Air Traffic Services

### 1.6.1. ATC communications

Appendix B shows the communications that took place between the crew and the control tower. The most relevant are highlighted below:

- At 12:53:35 the crew established contact and requested to land on runway 01 instead of 19. ATC provided wind information and, once confirmed by the crew, cleared them to land on 01R. The crew acknowledged 01R.
- At 13:03:29, while the aircraft was awaiting the signalman's instructions, the crew admitted to ATC that they had entered runway 01L into the FMS<sup>7</sup>, which could account for why they mistakenly landed on runway 01L instead of 01R. The controller stated that it was difficult from his vantage point to tell whether the aircraft was making the approach to 01R or 01L.

<sup>6</sup> "To avoid confusion among crews, it is recommended that aerodromes at which work is carried out in areas adjacent to the aerodrome's movement area include information concerning these areas in the AIP Spain charts before said work begins in those cases where these areas might be mistaken for runways."

<sup>7</sup> FMS: Flight Management System.

### 1.6.2. *Statement from the controller on duty at the Menorca TWR*

The controller stated in his report that the crew had requested runway 01R and to conduct an approach with the field in sight at 12:54. They were cleared for the visual approach as number one to land, and subsequently to land on 01R at 12:59. With the aircraft 2 NM from the runway, he could not discern any deviation in the aircraft's flight path from the runway centerline. By the time he finished giving instructions to the number 2 aircraft, the aircraft was at the runway 01L threshold. This runway was closed for repairs. The pilot stated once on the runway that it was free from obstacles, and complained about the lack of a marking to indicate the runway was closed.

### 1.6.3. *ATIS information*

Based on the 12:50, 13:00 and 13:10 (information Y, Z and A) ATIS information records provided by the Menorca Airport, the runway in use was 19L. The ATIS report used by the crew and annotated in the OFP<sup>8</sup> was information W (12:30), which also informed that the runway in use was 19L.

## 1.7. **Statement from personnel working on the closed runway**

At the time of the incident there were two workers on the runway, one on the right side of runway 01L, near rapid exit taxiway F, and another on the left side of 01L by taxiway D. A van was parked near the first worker on the right shoulder. Both workers were facing the 19 threshold and installing runway edge lights. They were communicating on walkie-talkies set to 121.750 Mhz.

The workers ignored the noise of the aircraft (to which they were accustomed) until the sound became so deafening that they turned to look and saw the aircraft near where they were working. The first worker got in the van and drove along the edge of taxiway F in order to signal the aircraft's pilot. The signalman then arrived and, once the airplane stopped on taxiway F, the signalman and the worker moved the barriers used to indicate that the taxiway was closed so as to allow the airplane to taxi on F to the stand, after which they returned the barriers to their previous position.

## 2. **ANALYSIS**

The CRJ200 aircraft, operated by Air Nostrum, landed on runway 01L at the Menorca Airport after taking off from Madrid. This runway was closed for construction and at the time of the landing, there were two workers performing maintenance at the edge of the runway.

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<sup>8</sup> Operational Flight Plan.



The AIP (SUP 23/10) warned of work to repair the pavement on the runway and taxiways. Specifically, during phase 3 (see Appendix A), scheduled to last from 2 March to 12 April 2011, the AIP stated that runway 01L/19R would remain closed and that runway 01R/19L would be in use.

The information published in the NOTAMS also mentioned the closing of runway 01L/19R, its associated exits and that the ILS was not operational. The airport had also notified those airlines that had operations at the airport, including the incident airline, of the closing of the runway via e-mail. The information available to the crew in its Operational Flight Plan was complete and included a reference to the information in the aforementioned AIP SUP 23/10 and NOTAMS. The crew thus had the information necessary to know that runway 01L/19R was closed.

The crew stated its understanding that they were cleared to land on runway 01L, which they acknowledged. Even though runway 19L was in use, since CAVOK conditions existed and there were no prevailing winds at either threshold, the crew, once they had the runway in sight (see Appendix B), requested to land on runway 01R (the approach to this runway was more direct and shorter than to runway 19L). The control tower cleared the crew to land on runway 01R. The crew acknowledged the clearance to land on 01R.

The crew also stated that the runway lacked the proper marking to indicate it was closed. The airport reported that the closed runway was marked, consisting of ten x-shaped markings, two painted in front of the displaced thresholds and eight cloth x's laid out along the runway. These markings are in keeping with Chapter 7 of Annex 14, as well as with Aena's Movement Area Markings Manual (see Appendix C), which stipulates the marking to be displayed at either end of a closed runway and along its length. The "x" shapes situated along the runway were made out of cloth and not painted on the pavement because the runway was practically ready to be reopened, a circumstance that the regulation takes into consideration in the event of temporary runway closings. The dimensions of the markings and the separation between them also adhered to regulations.

According to the crew statements, although the air traffic controller declared that he could not distinguish at first which runway the aircraft was heading for and that when he saw they were close to land he preferred not to request them a "go around", by checking the communications it has been proved that there is no conversation recorded regarding the decision of the controller to instruct the aircraft to perform or not to perform a "go around".

Weather conditions were CAVOK, according to both METAR reports and to the crew and ATC personnel, meaning there should have been no visual impediment to sighting the runway-closed markings.

Navigational references during normal operations typically rely on the information provided by the FMS. The route selected is shown on the MD (Multifunction Display),



the graphical display of which is widely used by crews. Also, even if the approach is done visually, the crew still uses all of the information available to ensure the highest probability of success and to maximize safety. One example of this is the use of the FD (Flight Director) guide bars.

As stated in the NOTAMs and confirmed by airport personnel, the ILS was not operative, meaning that an instrument approach to runway 01L could not have been inadvertently performed. According to ATC communications, however, once the aircraft was on the ground and following the signalman's instructions, and while waiting for another aircraft to land before being guided to parking, the crew admitted to ATC that they had mistakenly entered runway 01L into the FMS. Runway 01L/19R is normally in use, with operations on the other runway being restricted to contingency situations. The information provided by the FMS would have guided the approaching aircraft directly to the closed runway.

### **3. CONCLUSIONS AND CAUSES**

#### **3.1. Findings**

An analysis of the information gathered on this incident leads to the following conclusions:

- The crew had valid and in force licenses and medical certificates.
- The aircraft had valid and in force documentation and was airworthy.
- The airport had published an AIP supplement and NOTAMs indicating that runway 01L/19R was closed for repairs.
- The airport had also reported this fact via e-mail to those airlines that operated at the airport, including Air Nostrum.
- The ATIS informed that the runway in use was 19L.
- The information provided to the crew as part of the Operational Flight Plan reflected the condition of runway 01L/19R.
- The crew had annotated its OFP with the ATIS information.
- The crew requested to land on runway 01 to shorten the approach.
- After reporting wind information and confirming its suitability for landing, ATC cleared the aircraft to land on runway 01R.
- The crew acknowledged the clearance to land on runway 01R.
- The crew landed on runway 01L.
- Runway 01L was closed to traffic and had markings in accordance with ICAO Annex 14, as well as with Aena's Movement Area Markings Manual.
- The crew admitted to mistakenly entering the data for runway 01L instead of 01R into the FMS, which is why they were guided to that runway.
- The crew did not realize they were landing on a closed runway despite the markings.

### 3.2. Causes

The incident resulted from the crew's entering of the data for the closed runway, 01L, into the FMS computer by mistake, despite having information in the flight dispatch documentation warning that the runway normally in use was closed. The aircraft was guided to runway 01L and the crew, not noticing the runway-closed markings, landed on it.

## 4. SAFETY RECOMMENDATIONS

**REC 19/12.** It is recommended that Air Nostrum enhance its procedures for handling those circumstances in which the airports where it normally operates are in unusual configurations.

## **APPENDIX A**

### **AIP SUP 23/10**

# ESPAÑA

## AIS-ESPAÑA

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AEROPUERTOS ESPAÑOLES Y NAVEGACIÓN AÉREA  
DIVISIÓN DE INFORMACIÓN AERONÁUTICA  
c/ Juan Ignacio Luca de Tena, 14 - 28027 MADRID

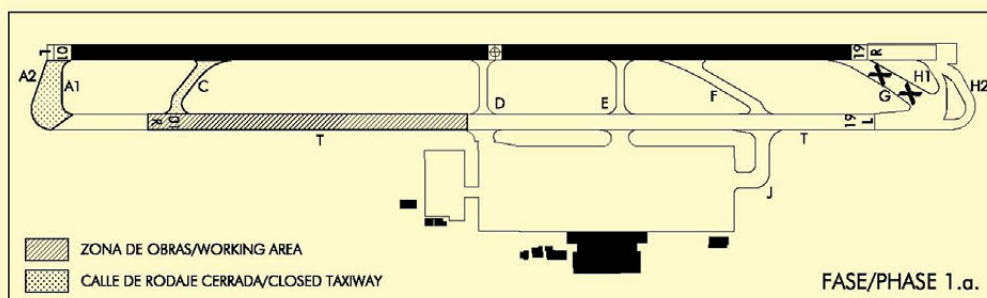
AIP - ESPAÑA

SUP 23/10

21-OCT-10

AD

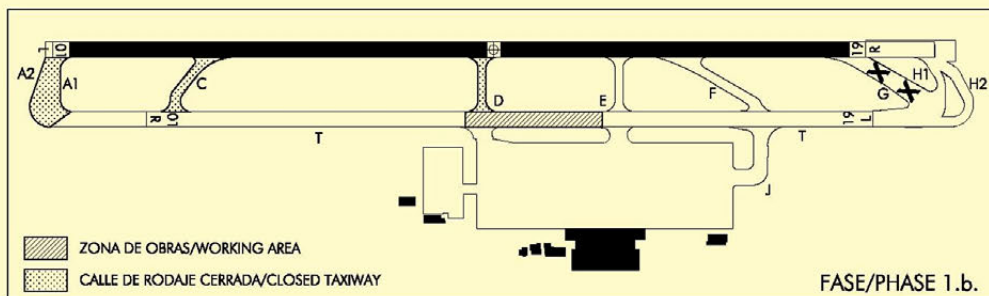
SUP 23/10	02NOV10/01JUN11EST	SUP 23/10	02NOV10/01JUN11EST
<b>MENORCA AD.- Obras de reparación de pavimento de pistas y calles de rodaje.</b>  Hasta el 01 de Junio de 2011 estimado, se realizarán obras de reparación de pavimento de pistas y calles de rodaje.  Estas obras se realizarán en 4 fases. Dividiendo la primera en otras cuatro subfases.  Las fechas de inicio y fin de cada una de las fases, así como cualquier incidencia operativa que se produzca, se publicarán mediante el correspondiente NOTAM.  Todas las zonas de obras estarán debidamente señalizadas y con balizamiento diurno y nocturno. En todas ellas se recomienda precaución debido a la presencia de personal y maquinaria.		<b>MENORCA AD.- Works for repairing runway and taxiways pavement.</b>  Until June 01st 2011 estimated, works for repairing runway and taxiways pavement will take place.  These works will be carried out in 4 phases. The first one dividing in other four subphases.  Starting and ending dates of each phase, as well as any operative incident that takes place, will be announced by NOTAM.  All working areas will be properly making and lit during day and night. In all of them caution is recommended due to presence of personnel and machinery.	
<b>FASE 1. Reparación del pavimento de la pista 01R/19L (Pista de contingencia).</b> <b>Fase 1.a</b> Obras desde el umbral 01R hasta 47,5 m del eje de la calle de rodaje D (sur). - Período estimado: desde el 02 de Noviembre de 2010 hasta el 11 de Noviembre de 2010. - Afecta a: calles de rodaje A1, A2 y C cerradas.		<b>PHASE 1. Repair of runway 01R/19L pavement (Contingency runway).</b> <b>Phase 1.a</b> Works from threshold 01R to 47.5 m of taxiway D centre line (South). - Estimated period: from November 02th 2010 until November 11th 2010. - Affects to: taxiways A1, A2 and C closed.	



**Fase 1.b**  
Obras desde 47,5 m del eje de la calle de rodaje D (sur) hasta 47,5 m del eje de la calle de rodaje E (sur).  
- Período estimado: desde el 12 de Noviembre de 2010 hasta el 18 de Noviembre de 2010.  
- Afecta a: calles de rodaje A1, A2, C y D cerradas.

**Phase 1.b**  
Works from 47.5 m of taxiway D centre line (South) to 47.5 m of taxiway E centre line (South).  
- Estimated period: from November 12th 2010 until November 18th 2010.  
- Affects to: taxiways A1, A2, C and D closed.

- 1 SUP 23/10 -



## Fase 1.c

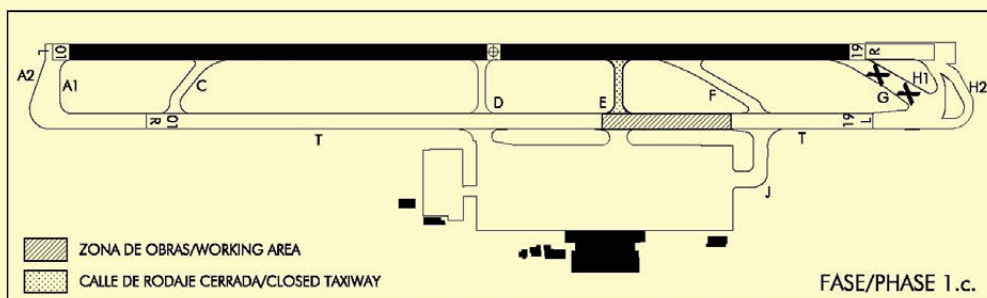
Obras desde 47,5 m del eje de la calle de rodaje E (sur) hasta 47,5 m del eje de la calle de rodaje F (sur).

- Periodo estimado: desde el 19 de Noviembre de 2010 hasta el 25 de Noviembre de 2010.
- Afecta a: tramo de calle de rodaje T entre calle de rodaje D y calle de rodaje F cerrada. Calle de rodaje E cerrada.

## Phase 1.c

Works from 47.5 m of taxiway E centre line (South) to 47.5 m of taxiway F centre line (South).

- Estimated period: from November 19th 2010 until November 25th 2010.
- Affects to: section taxiway T between taxiway D and taxiway F closed. Taxiway E closed.



## Fase 1.d

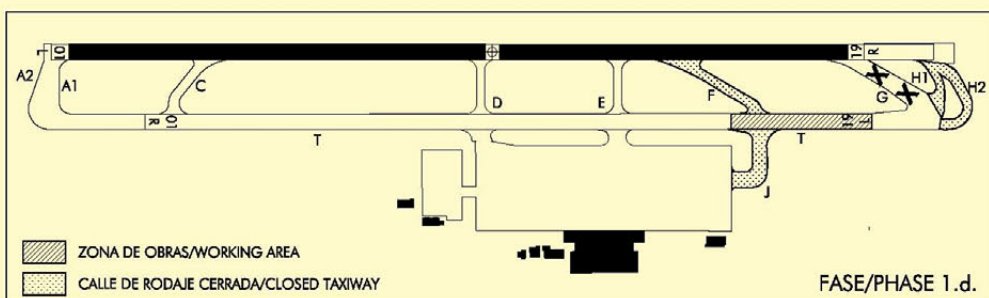
Obras desde 47,5 m del eje de la calle de rodaje F hasta el umbral 19L.

- Periodo estimado: desde el 26 de Noviembre de 2010 hasta el 16 de Diciembre de 2010.
- Afecta a: calles de rodaje F, J, H1 y H2 cerradas.

## Phase 1.d

Works from 47.5 m of taxiway F centre line to threshold 19L.

- Estimated period: from November 26th 2010 until December 16th 2010.
- Affects to: taxiways F, J, H1 and H2 closed.



**FASE 2. Reparación del pavimento de la TWY D.**

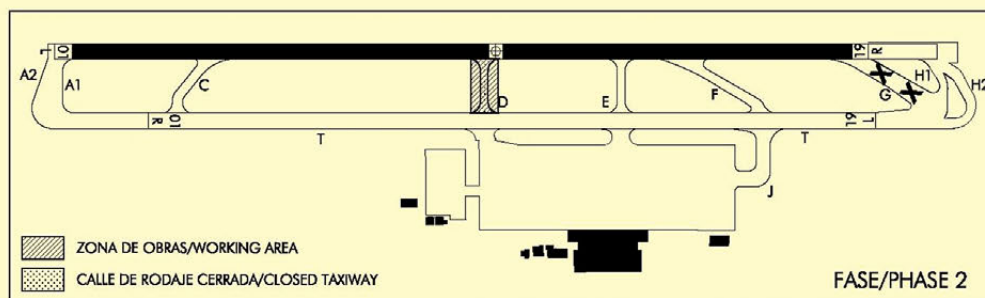
- Período estimado: desde el 17 de Diciembre de 2010 hasta el 17 de Febrero de 2011.

- Afecta a: calle de rodaje D cerrada.

**PHASE 2. Repair of the taxiway D pavement.**

- Estimated period: from December 17th 2010 until February 17th 2011.

- Affects to: taxiway D closed.

**FASE 3. Reparación del pavimento de la pista 01L/19R (Pista principal).**

- Período estimado: desde el 02 de Marzo de 2011 hasta el 12 de Abril de 2011.

- Afecta a:

- Pista 01L/19R cerrada.
- Operaciones por la Pista 01R/19L.

\* Puestos de estacionamiento 2, 4, 6, 8, 10, 12, 14 y 16 y zona W de la Plataforma de Aviación General fuera de servicio.

- Limitación del uso de la pista 01R/19L a aeronaves de envergadura máxima de 36 m.

**PHASE 3. Repair of the runway 01L/19R pavement. (Main runway).**

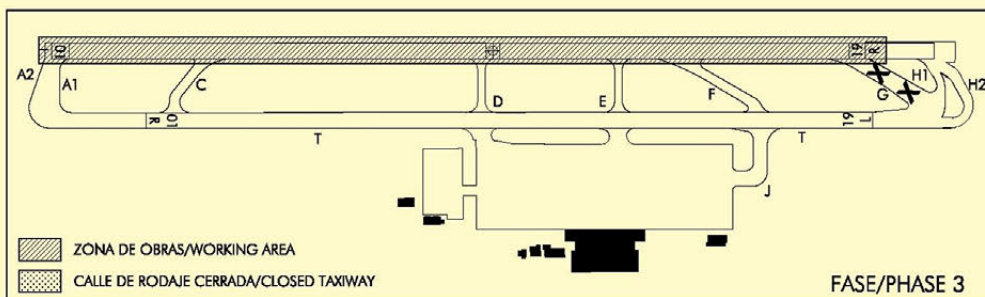
- Estimated period: from March 02th 2011 until April 12th 2011.

- Affects to:

- Runway 01L/19R closed.
- Runway 01R/19L operations.

\* Stands 2, 4, 6, 8, 10, 12, 14 and 16 and W zone of General Aviation Apron out of service.

- Limitation of use of the runway 01R/19L to maximum aircraft of 36 m.

**FASE 4. Reparación del pavimento de la TWY E.**

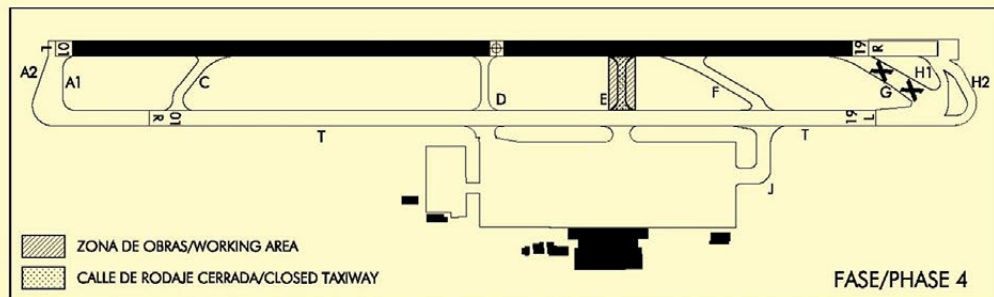
- Período estimado: desde el 13 de Abril de 2011 hasta el 01 de Junio de 2011.

- Afecta a: calle de rodaje E cerrada.

**PHASE 4. Repair of the taxiway E pavement.**

- Estimated period: from April 13th 2011 until June 01th 2011.

- Affects to: taxiway E closed.







## **APPENDIX B**

### **ATC communications**

**Freq: 119.65/120.7 (Paired)**

**-12.53.35-** ANE8884- Menorca, good day, ANE8884.

-12.53.39- TWR- ANE8884, good day. You'll be number 1. Do you have the field in sight?

-12.53.45- ANE8884- I have the field in sight and if you want runway 01, we'll go in on 01.

-12.53.48- TWR- Wind is 240 05, maximum 9 kt, is that ok for you?

-12.53.52- ANE8884- Yes, yes, perfect.

-12.53.55- TWR- ANE8884, cleared as number 1 for contact approach runway 01R, QNH 1017, ATIS information Y.

-12.54.07- ANE8884- 10917 for 01R, thank you.

-12.54.12- TWR- 2952, back-track, signalman gate D.

-12.54.15- SWT3952- Back-track, signalman gate D. SWT 3952.

**-12.58.12-** TWR- ANE8884 cleared to land runway 01R, wind 240 04, maximum 9 knots.

-12.58.20- ANE8884- cleared to land 01R, triple eight four.

-12.58.24- ANE8478- Menorca, good day, ANE8478, descending to 70 to the VOR.

-12.58.32- TWR- ANE8478, do you have the field in sight?

-12.58.38- ANE8478- affirm, 8478.

-12.58.40- TWR- 8478, the wind is 240 04, maximum 9 knots. Which runway do you prefer?

-12.58.47- ANE8478- Yes, 01R, 8478.

-12.58.50- TWR- 8478, with the field in sight, cleared for contact approach runway 01R QNH 1017, information Y.

-12.58.59- ANE8478- Information Y, 1017 for 01R, 8478.

**-13.01.01-** a1- Uh..., Menorca, ANE8884?

-13.01.11- TWR- triple eight four, signalman at gate D. Correction, signalman at gate J. I confirm that the runway in use was 01R, you landed on 01L.

-13.01.25- ANE8884- That's right.

**-13.01.38-** ANE8884- Where do we exit?

-13.01.41- TWR- eight four... triple eight four, he's on his way to you. Hold your position. The papa car is going to you now to move the gates.

-13.01.51- ANE8884- Roger.

**-13.01.59-** P4. Tower, P4, permission to enter the runway?

-13.02.04- TWR- P4, tower, understand you are going to cross the runway, there is traffic on final for runway 01R.

-13.01.13- P4- OK, I'm following your instructions and I'm at J short of the runway awaiting instructions.

-13.02.18- TWR- OK, i see you at J short of the runway. Cross the runway and report when clear.

-13.02.23- P4- Cross the runway and report when clear.

-13.02.27- TWR- ANE8884, cleared to land runway 01R, wind 250, 06, maximum 10 kt.

**-13.02.44-** ANE8478- Menorca, ANE8478, we're on a wide right base for 01R.

-13.02.51- TWR-8478 roger, you are cleared to land 01R, wind 240 06, maximum 10 kt.

-13.03.02- ANE8478- Cleared to land 01R, ANE8478.

-13.02.06- TWR- tower papa car.

-13.02.07-P4- Yes, P4 confirms runway clear. We'll hold short until the next one lands... (garbled).

-13.03.15- TWR- Affirm P4, hold your position.

-13.03.20- P4- Copy.

-13.03.24- ANE8884- Yes, Menorca, this is triple eight four.

-13.03.26- TWR- Triple eight four, go ahead.

-13.03.29- ANE8884- Yes, we're with the signalman now and, nothing, our mistake, I had input the left runway into the FMS and the mistake is completely mine, there's... there's no other explanation.

-13.03.40- TWR- Alright, roger. The fact is that from here it's hard to tell on final whether you're heading for one runway or the other, but anyway, it's ok, no harm done.

-13.03.51- ANE8884- Yes, the problem was that, I had entered the left runway into the FMS and it was, it was my mistake. But anyway... we broke it in, right?

-13.04.02- TWR- Firefighters, tower, go ahead.

- 13.04.04- SCI- Let's see, umm... The pilot told you what... what we could do?
- 13.04.15-TWR- Firefighters, tower, we don't need your services. you can return to parking. There's no emergency and nothing's been declared.
- 13.04.25- SCI- We were headed there because coordination notified us, but we'll return to parking.
- 13.04.34- TWR- return to parking, there's no emergency and you don't need to be scaring the passengers.
- 13.04.39- SCI- Roger, copy that.
- 13.04.44- ANE8478- Final 01R, ANE8478.
- 13.04.48- TWR- 8478, continue as cleared.
- 13.05.58**- TWR- 8478, signalman at J, to your right.
- 13.06.02- ANE8478- Signalman at J, 8478.
- 13.06.06- TWR- P4 guide triple eight four to J as well, please.
- 13.06.11- P4- OK, in sight. We're behind the aircraft.
- 13.06.15- TWR- Thank you.

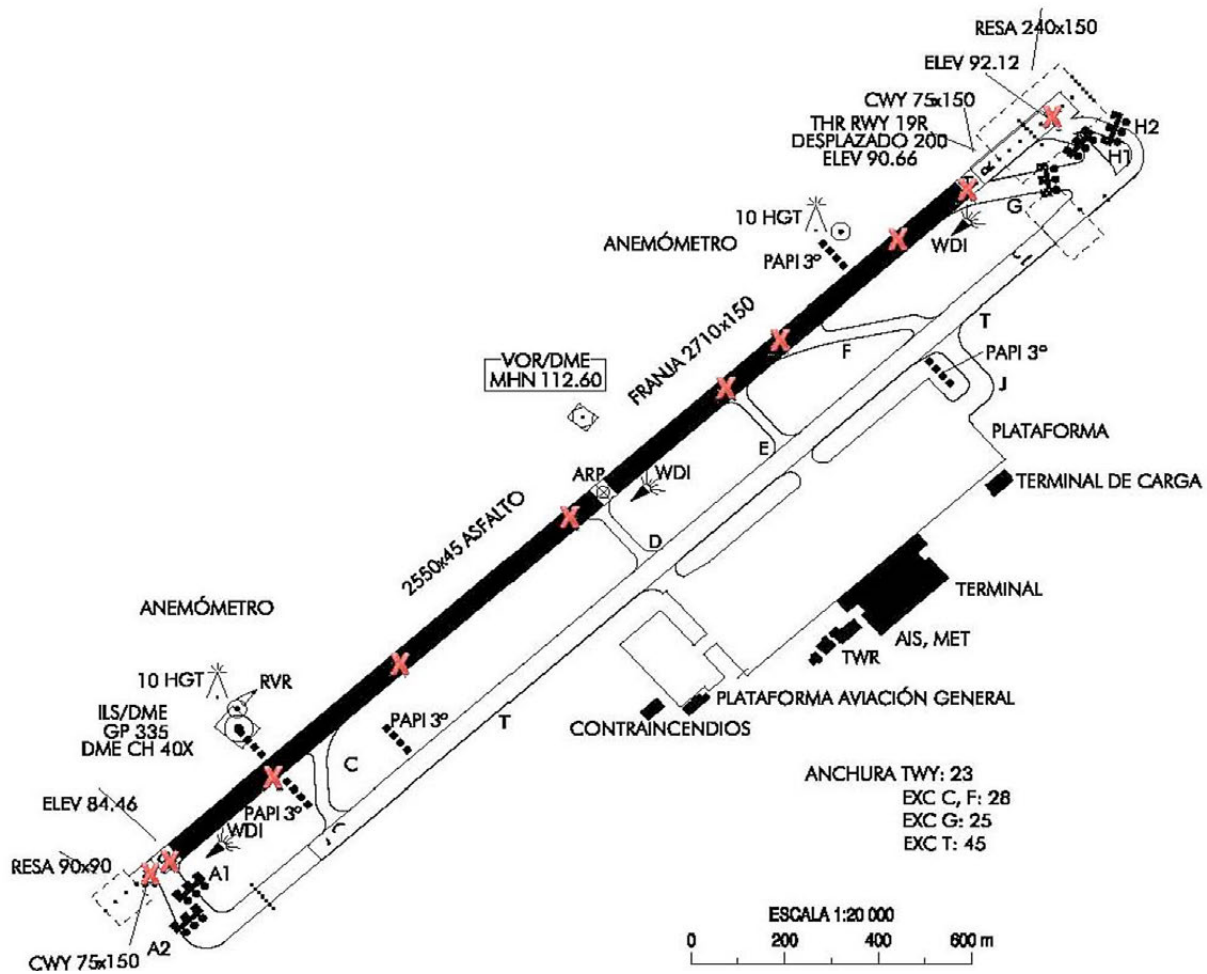
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END of TRANSCRIPT

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## **APPENDIX C**

**Diagram of the runway-closed markings  
and information on runway-closed signs**



Chapter 7 of ICAO Annex 14 states that:

### 7.1. Closed runways and taxiways, or parts thereof

#### Application

- 7.1.1. A closed marking shall be displayed on a runway or taxiway or portion thereof which is permanently closed to the use of all aircraft.
- 7.1.2. **Recommendation.**— A closed marking should be displayed on a temporarily closed runway or taxiway or portion thereof, except that such marking may be omitted when the closing is of short duration and adequate warning by air traffic services is provided.



## Location

- 7.1.3. On a runway a closed marking shall be placed at each end of the runway, or portion thereof, declared closed, and additional markings shall be so placed that the maximum interval between markings does not exceed 300 m. On a taxiway a closed marking shall be placed at least at each end of the taxiway or portion thereof closed.

## Characteristics

- 7.1.4. The closed marking shall be of the form and proportions as detailed in Figure 7-1, Illustration a), when displayed on a runway, and shall be of the form and proportions as detailed in figure 7-1, Illustration b), when displayed on a taxiway. The marking shall be **white** when displayed on a runway and shall be **yellow** when displayed on a taxiway.

Note.— When an area is temporarily closed, frangible barriers or markings utilizing materials other than paint or other suitable means may be used to identify the closed area.

Annex 14 — Aerodromes

Volume I

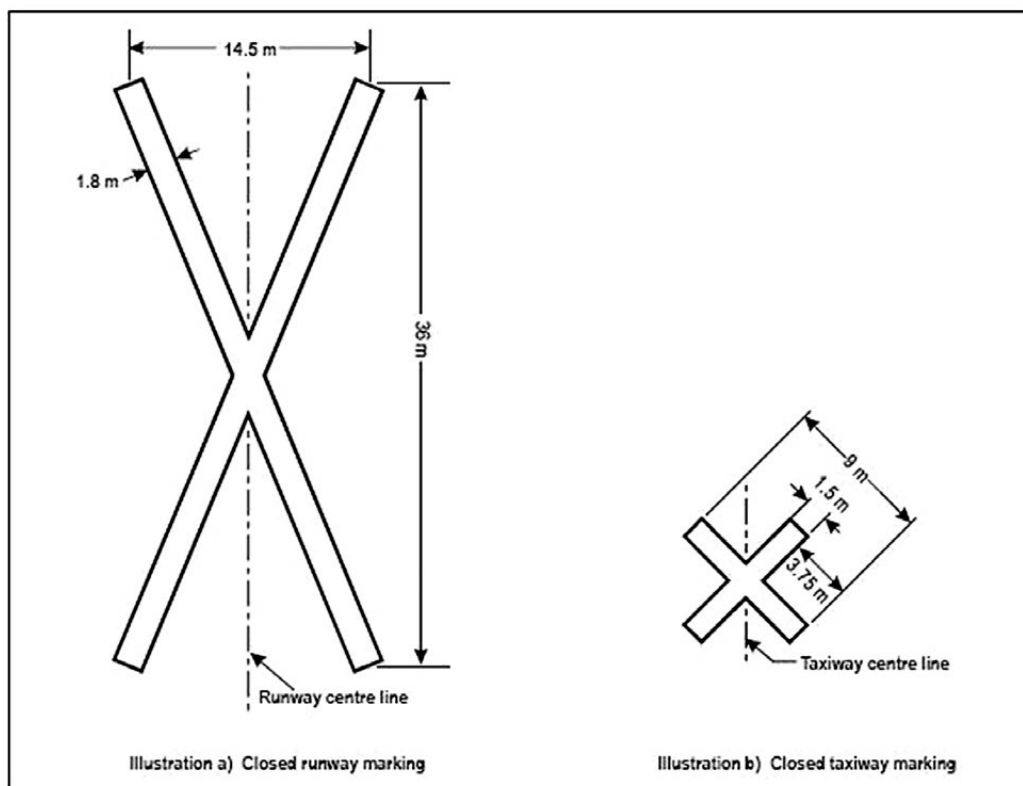
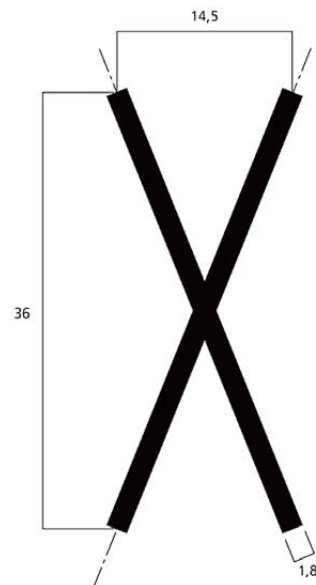
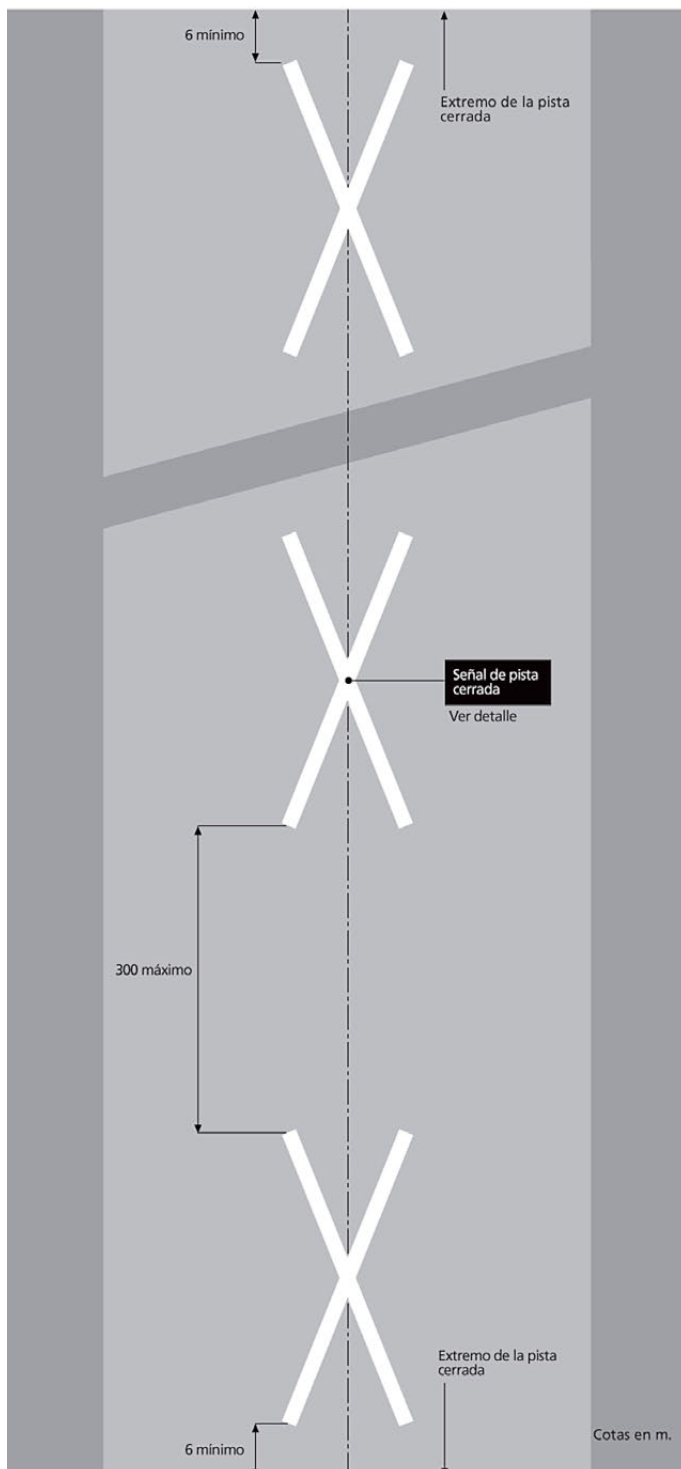


Figure 7-1. Closed runway and taxiway markings

## Señal de pista cerrada

1.7



A closed marked should be displayed on a runway or portion thereof which is temporarily or permanent closed to the use of all aircraft.

On a runway a closed marking shall be placed at each end of the runway, or portion thereof, declared closed, and additional markings shall be so placed along the runway that the maximum interval between markings does not exceed 300 m.



Color de la señal:  
Blanco.



Color de contraste:  
Negro.

Estas señales podrán rebordearse en negro para aumentar el contraste con el pavimento de la pista. Ver criterios en 1.5.

## **APPENDIX D**

### **Mitigating measures for the proper dissemination of AENA information**



CÓDIGO: EXA47

FECHA: 07/05/07

Dirección de Operaciones y Sistemas de Red

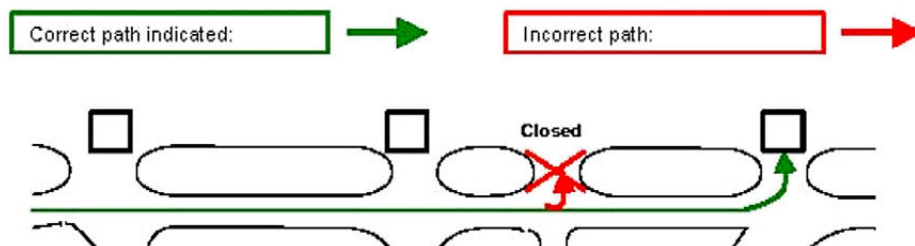
## 5. SITUATIONS INVOLVING OPERATIONS

### 5.1 IMPROPER DISSEMINATION OF INFORMATION.

**SITUATION:** The closing of a runway and of other parts of the movement area, due to construction or for any other scheduled or unforeseen circumstance, is not communicated to users sufficiently in advance or using the proper means.

**Example 1:** Occasionally, an airport where a new runway was being built has failed to properly communicate this fact, resulting in crews on approaching aircraft mistaking the runway under construction with the runway in use, since pavement under construction is easier to see than the pavement on the runway in use.

**Example 2:** Another situation that could arise involves having one or several apron access gates closed due to construction in the area, or to the gates themselves being under construction. For example, the TWR might instruct a pilot to access the apron via the third gate. The pilot starts counting as he taxis past and turns at the third gate to access the apron, failing to notice that it is closed due to construction and that the TWR meant the following gate.



**RISK:** The improper dissemination of information on a runway or other part of the movement area that is out of service can, along with other factors (adverse weather conditions, improper personnel training, excessive workload, etc.), lead to a runway incursion or to some other situation that negatively affects the aerodrome's operational safety.

#### MITIGATING MEASURES:

- Publication, as appropriate, and in keeping with established procedures, of the information in question:
- The provisions in EXA 1, Work Coordination Procedure, must be applied when applicable so as to provide information on those times when the airport's capacity will be diminished or limited as a result of any work, so that flights can be scheduled around the work.

#### DIVISIÓN DE OPERACIONES

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Aena



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- Publication of the corresponding NOTAM and/or Supplement (SUP) well enough in advance. If the information to be disseminated requires long texts, graphs, maps, or if the situation is going to last more than three months, it will be published using a Supplement (SUP) in keeping with established procedures (AIRAC cycle). A NOTAM must then be published shortly before the work in question is to commence.
- If required by the situation (for long duration work, for example), publish this fact in the AD section of the AIP.
- ATIS.
- Local information bulletins.

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