



## Serious incident

between the De Havilland DHC-6 registered **PJ-WIX** operated by Winair and the Pilatus PC12 registered **N590TW** operated by Tradewind Aviation on Wednesday 29 January 2025 on Saint-Barthélemy airport

Time	Around 21:15 <sup>1</sup>
Operator	PJ-WIX: Winair N590TW: Tradewind Aviation
Type of flight	PJ-WIX: Scheduled passenger commercial air transport N590TW: Scheduled passenger commercial air transport
Persons on board	PJ- WIX: captain (PF <sup>2</sup> ), co-pilot (PM), 16 passengers N590TW: captain (PF), co-pilot (PM), 1 Passenger
Consequences and damage	None

This is a courtesy translation by the BEA of the Final Report on the Safety Investigation. As accurate as the translation may be, the original text in French is the work of reference.

## Landing on an engaged runway

### 1 HISTORY OF THE FLIGHT

*Note: the following information is principally based on statements, radiocommunication recordings, FlightRadar24<sup>3</sup> data and security camera footage.*

The crew of N590TW took off at 20:45 from V. C. Bird international airport at Antigua-et-Barbuda bound for Saint-Barthélemy. The crew of PJ-WIX took off at 21:03 from Princess-Juliana international airport at Sint Maarten, also bound for Saint-Barthélemy. On approach to Saint-Barthélemy, the two crews contacted the AFIS officer in English. The AFIS officer transmitted the weather information and indicated that runway 10 was in use. The two crews indicated that they planned to land on runway 28.

From 21:07, the crew of N590TW carried out 360° separation manoeuvres south of point COCO (see **Figure 1**, point **1**) due to traffic in front of them on approach to land on runway 28. At the same time, the crew of PJ-WIX were approaching FOURCHUE. The AFIS officer informed the two crews of their respective position in the approach sequence. The crew of PJ-WIX indicated that they were slowing down and mentioned N590TW (point **2**).

<sup>1</sup> Except where otherwise indicated, times in this report are UTC. Four hours should be subtracted to obtain the local time.

<sup>2</sup> The glossary of abbreviations and acronyms frequently used by the BEA can be found on its [web site](#).

<sup>3</sup> The Princess-Juliana air navigation services were not able to extract the radar data. Furthermore, the airport operator was unable to extract data from its radar and ADS-B data display system. The radiocommunications and ADS-B data recorded by FlightRadar24 were synchronized solely based on the time stamp of each system used.

At 21:11:03 (point 3), the crew of N590TW reported that they were at point COCO for a LH approach to runway 28.

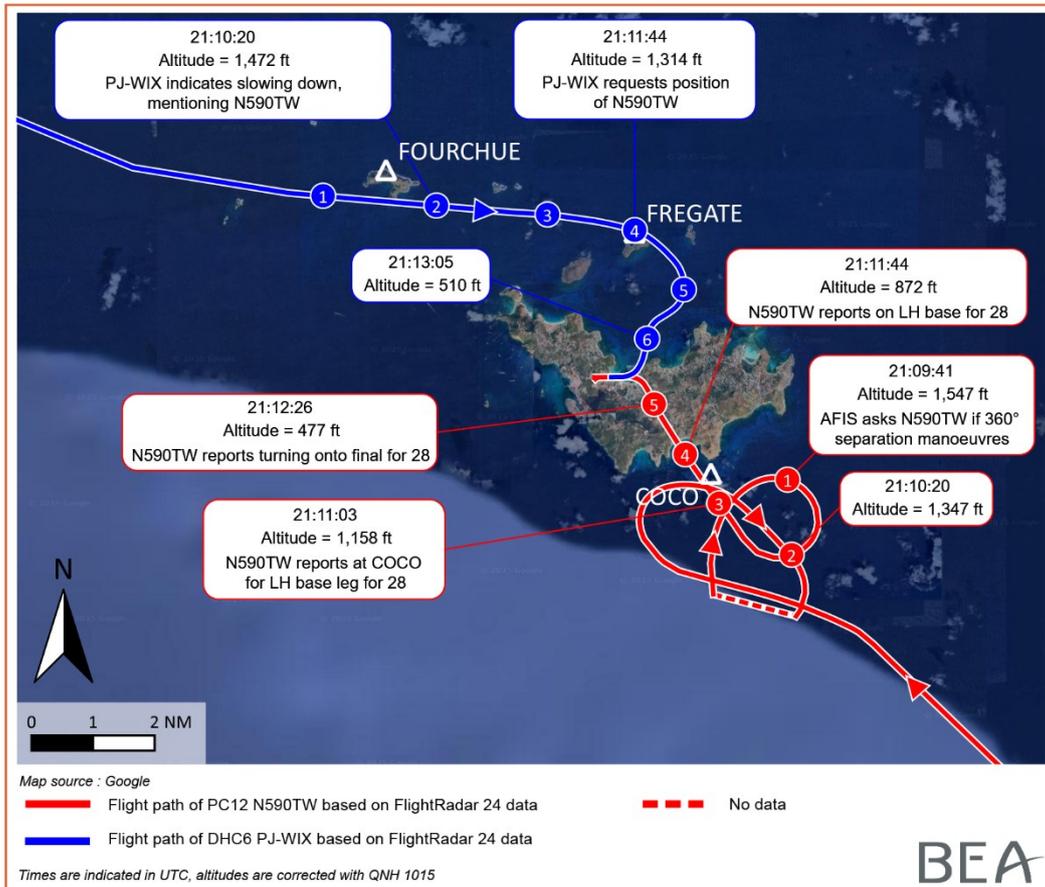


Figure 1: flight paths - overall view (source: BEA)

At 21:11:44, the crew of PJ-WIX asked for the position of N590TW. The crew of N590TW reported that they were on the LH base leg (point 4) and then at 21:12:26, that they were turning onto final for runway 28 (point 5).

At 21:13:05, the crew of N590TW landed on runway 28 (see Figure 2, point 6). Four seconds later, the crew of PJ-WIX reported that they were on short final. At this point, they were at the end of the RH base leg for runway 28 (point 7).

At 21:13:26, the AFIS officer warned the crew of PJ-WIX who were then turning onto the final approach (point 8) of traffic<sup>4</sup>, "Caution traffic has to vacate by D<sup>5</sup>". The crew of PJ-WIX did not acknowledge the message. At the end of the landing run, without transmitting a message on the frequency, the crew of N590TW veered onto the paved strip situated on the RH side of the runway (see paragraph 2.2.1), carried out a LH U-turn and then started backtracking the runway.

<sup>4</sup> This message referred to N590TW.

<sup>5</sup> Taxiway "D" is situated on the RH side at the end of runway 28 and leads to the "general aviation" parking (see paragraph 2.2.1). At the time of the serious incident, another aeroplane was holding on taxiway "A" which leads to the "main" parking from the end of runway 28 (opposite taxiway "D"), preventing the crew of N590TW from vacating the runway via this taxiway.

At 21:13:35, the AFIS officer again warned the crew of PJ-WIX of the presence of the preceding aeroplane on the runway. PJ-WIX then arrived abeam EDEN ROCK (point 9) which constitutes the point beyond which the crew cannot carry out a missed approach; the crew briefly pushed the push-to-talk by way of a readback. The AFIS officer repeated the information ten seconds later when PJ-WIX was on short final at 47 ft (Point 10). The crew of PJ-WIX landed as the crew of N590TW backtracked the runway before vacating it via taxiway "B".

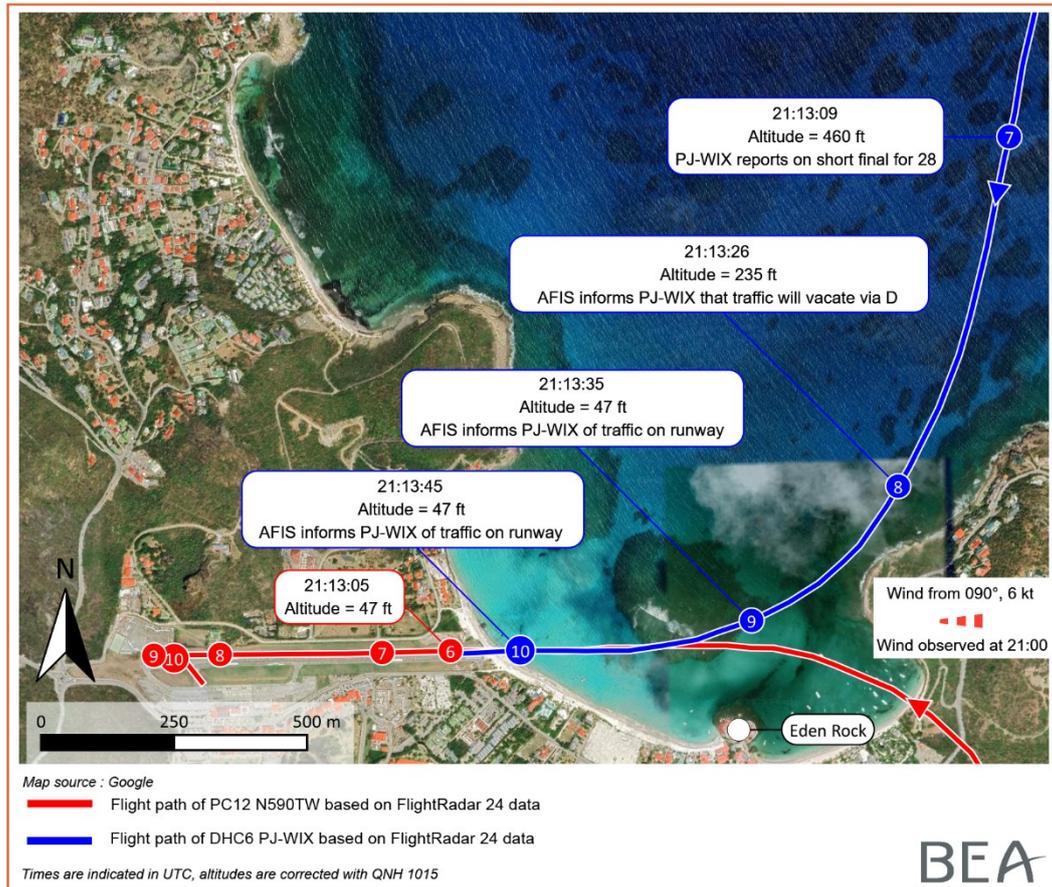


Figure 2: flight paths - detail view (source: BEA)

In the image from the security camera recording (see Figure 3), PJ-WIX can be seen (at the bottom LH side) carrying out its landing run. At this point, it was around 360 m from the intersection with taxiway "B" which the crew of N590TW were taking to vacate the runway.



Figure 3: image from security camera recording  
(source: aerodrome operator)

## 2 ADDITIONAL INFORMATION

### 2.1 Experience and statements

#### 2.1.1 Crew of PJ-WIX

	Captain	Co-pilot
<b>Age</b>	38 years	30 years
<b>Licence and ratings</b>	CPL IR/ME DHC-6 TR	CPL IR/ME DHC-6 TR
<b>Total experience</b>	4,000 h	1,586 h
<b>Experience in 90 days</b>	135 h	138 h
<b>Authorization to land at Saint-Barthélemy</b>	24 February 2016	-

The crew of PJ-WIX stated that they were aware they were behind N590TW and extended the downwind leg to ensure sufficient separation with it<sup>6</sup>. The captain explained he saw N590TW when they were on the base leg. When they turned onto final, they found themselves facing into the sun. The crew explained that they could not see what was happening at the end of runway 28 due to glare and shadows in that area.

The crew heard the AFIS officer inform them of traffic on the runway, but according to them, they could no longer carry out a missed approach at that time. The approach was continued at the lowest possible speed. The crew stated that they were not aware that N590TW was turning around to backtrack the runway and vacate it via taxiway "B".

The co-pilot explained that, in his opinion, the separation from N590TW was sufficient and would have allowed for a safe landing had the N590TW crew not turned around to backtrack the runway.

<sup>6</sup> PJ-WIX is not equipped with a TCAS.

### 2.1.2 Crew of N590TW

	Captain	Co-pilot
<b>Age</b>	35 years	27 years
<b>Licence and ratings</b>	CPL IR/ME SET PC12 CR	CPL IR/ME SET PC12 CR
<b>Total experience</b>	1,485 h	1,325 h
<b>Experience in 90 days</b>	165 h	250 h
<b>Authorization to land at Saint-Barthélemy</b>	9 September 2024	23 October 2024

The crew of N590TW indicated that they carried out holding manoeuvres before passing point COCO to leave sufficient separation with preceding traffic, including a PC-12 on a LH approach to runway 28. After passing COCO, they heard the crew of PJ-WIX announce their arrival between points FOURCHUE and FREGATE. The captain indicated that when they were on the base leg, he saw PJ-WIX. PJ-WIX was also visible on the TCAS.

The crew landed on runway 28, and the landing run took them past taxiway "B". Due to the presence of another PC-12 at the holding point on taxiway "A", the crew decided to carry out a U-turn and backtrack the runway to taxiway "B". The crew heard the AFIS officer repeatedly warn the crew of PJ-WIX of their presence on the runway. They were aware that this aircraft was on approach behind them but they were unaware that the separation was so small. After carrying out the U-turn, the crew observed that PJ-WIX was landing directly in front of them. The captain increased engine power to accelerate the taxiing and vacate the runway as quickly as possible.

### 2.1.3 AFIS officer

The AFIS officer on the frequency at the time of the serious incident had been working at this airport for 25 years.

He explained that, in the circumstances of this serious incident, it was for the crew of PJ-WIX to ensure the separation. According to him, the crew did not expect N590TW to backtrack the runway. The AFIS officer thought that it may already have been too late for the crew of PJ-WIX to carry out a missed approach when he transmitted information about the presence of N590TW on the runway. He had felt powerless in the situation of the serious incident. According to him, his prerogatives as AFIS officer did not allow him to do more or differently. He was aware that the crew of N590TW could not exit at runway "A" due to the presence of another aircraft at the holding point. He could not recall whether, through the wording he used in the initial traffic information he gave to the crew of PJ-WIX regarding the presence of an aircraft on the runway ("*caution traffic has to vacate by D*"), he intended to encourage the crew of N590TW to act accordingly, or whether he was influenced by N590TW's initial deviation to the RH side of the runway.

He considered that the traffic was heavy at the time of the serious incident. He explained that because of the wind conditions, runway 10 was in use. According to him, however, it is common practice, when this runway is in use but the tailwind component on runway 28 is weak, for pilots to choose to land on the latter; the approach over the pass to runway 10 is more challenging for pilots. In this situation, the alternating take-offs, which must be carried out from runway 10, and landings on runway 28 further complicate traffic flow.

He also indicated that he did not fully utilize the display system at his disposal due to some radar blips being masked and the inaccuracy of the ADS-B data.

Note: DSAC-AG specified that the Juliana radar coverage did not permit detection in modes A and C in the Saint-Barthélemy area. The purpose of the ADS-B data is to fill in the blips in the area not covered by the Juliana radar.

## 2.2 Aerodrome and air navigation information

### 2.2.1 General information

Saint-Barthélemy airport is a restricted-use airport. It is reserved for aircraft whose pilots hold a specific authorization. This authorization is based on an instructor certifying the proficiency of the pilot after completion of theoretical and practical training. In commercial air transport, the training program is defined by the operator.

Use of the airport is subject to the opening of the AFIS service, every day between 07:00 (local time) and 15 minutes after sunset. The AFIS officers have a system at their disposal that displays remote radar data from Princess-Juliana airport as well as ADS-B data. It is used solely as a tool to help improve awareness of the surrounding traffic. The AFIS officers are not authorized to use this tool when giving traffic information. The AFIS provider operations manual does not specify that an aircraft at a holding point should be the subject of a traffic information, and in particular that this traffic information should be given to the crew of another aircraft in the process of landing.

Saint-Barthélemy airport has a paved runway 10-28, measuring 646 m long and 18 m wide. All take-offs are from runway 10. Runway 10 is also the preferred runway for landings.

Runway 28 has a landing distance of 646 m. It is connected to the "main" parking to the south by taxiways "C", "B" and "A", located respectively 350 m, 545 m and 640 m from the threshold, and to the "general aviation" parking to the north via taxiway "D", located opposite taxiway "A" at the end of the runway. There is a paved strip approximately 50 m long and 20 m wide within the runway safety area between the runway and the "general aviation" parking and is directly adjacent to taxiway "D".

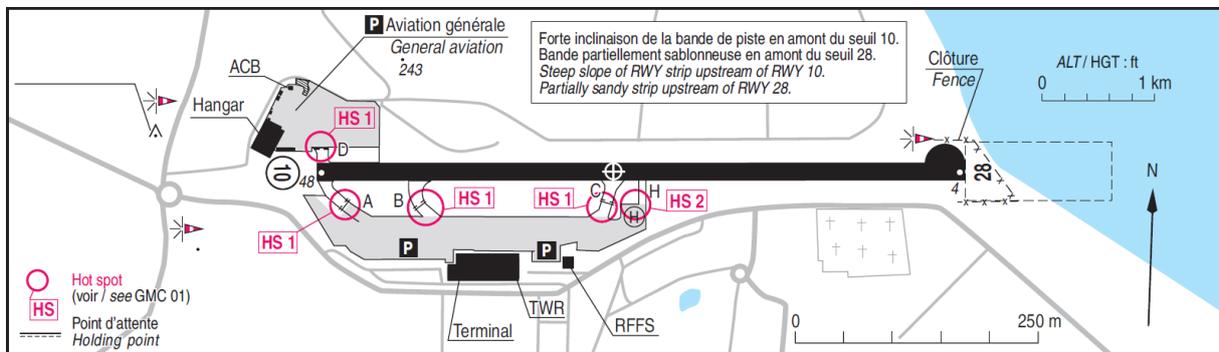


Figure 4: excerpt from AIP France (source: SIA)

The approach to runway 28 can be made by joining the RH or LH base leg, respectively from the reporting points FREGATE (north) or COCO (south). Due to environmental constraints, a missed approach to runway 28 can only be carried out by making a RH turn no later than

approximately 0.25 NM from the threshold (EDEN ROCK decision point, corresponding to a southern tip of land extending into the bay). The AIP does not define criteria for carrying out a missed approach abeam this point, for example, should the runway be engaged. The AIP warns of the risk of dazzling on final approach to runway 28 at the end of the day.

In addition to environmental hazards, the AIP<sup>7</sup> mentions various traffic-related hazards. The aerodrome is restricted to aircraft equipped with radios and transponders. Pilots are reminded about *"the presence of several aircraft flying under visual rules and significant speed differences between the various aircraft flying in the aerodrome circuit."* As a consequence, all aircraft are asked to *"strictly comply with trajectories, altitudes and reporting points of published aerodrome circuit."* It is also specified that English must be used by all the pilots on the frequency whenever a pilot speaks English. The risks of frequency overload are also mentioned. Finally, pilots are urged to exercise the *"utmost vigilance [...] in order to constantly maintain a good awareness of the situation and to ensure visual vigilancy about the prevention of collision."*

### 2.2.2 Air traffic information

Over the past ten years, the number of movements recorded at Saint-Barthélemy airport has globally followed a slight upward trend, even though it experienced drops in traffic in 2017-2018 (due to hurricane Irma) and then in 2020-2021 (due to the COVID-19 pandemic). In 2023 and 2024, the total number of movements was around 42,000, compared to approximately 36,000 in 2015 and 2016.

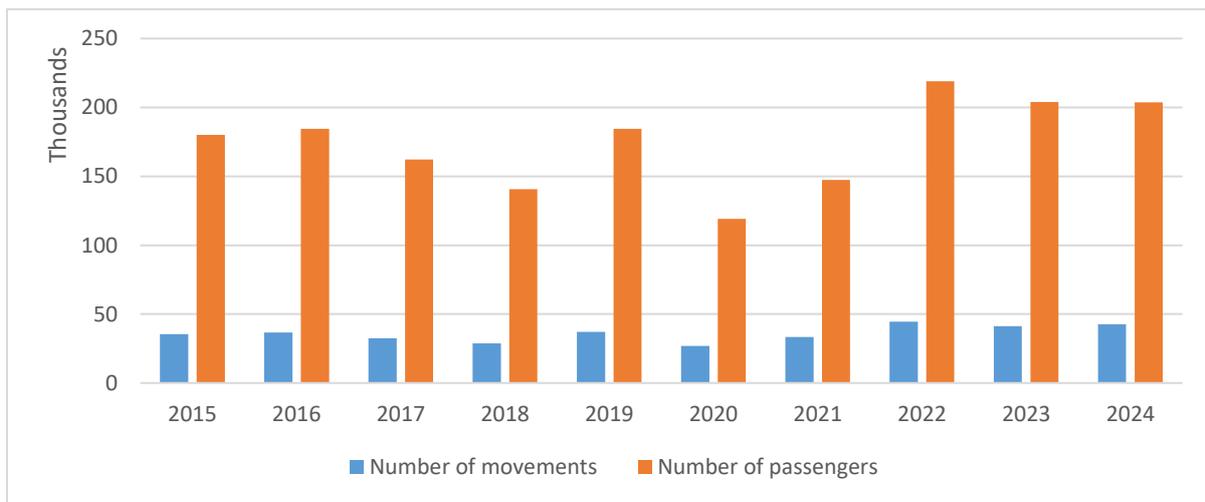


Figure 5: statistics for Saint-Barthélemy airport (source: Union des Aéroports Français)

In 2023 and 2024, more than 90% of the movements involved commercial air transport. Over 200,000 passengers were transported during each of these two years. The commercial activity at Saint Barthélemy airport is seasonal, with a peak between November and March. On one day, 323 aircraft movements were recorded during this period.

<sup>7</sup> Link consulted 27 February 2025: [https://www.sia.aviation-civile.gouv.fr/dvd/eAIP\\_20\\_FEB\\_2025/CAR-SAM-NAM/AIRAC-2025-01-23/pdf/FR-AD-2.TFFC-fr-FR.pdf](https://www.sia.aviation-civile.gouv.fr/dvd/eAIP_20_FEB_2025/CAR-SAM-NAM/AIRAC-2025-01-23/pdf/FR-AD-2.TFFC-fr-FR.pdf)

Air operators flying to Saint Barthélemy are granted traffic rights corresponding to a weekly volume. Air traffic at Saint Barthélemy is not regulated in any manner, however. Much of the activity is determined by the arrival and departure times of international flights at Princess-Juliana airport, from or to which Saint Barthélemy passengers are transported. A peak of 47 movements in one hour has already been recorded.

During the ten-minute period immediately preceding the serious incident, the pilots of nine aircraft transmitted on the Saint Barthélemy frequency. It was calculated that the frequency was occupied 52% of the time.

### **2.3 Collision risk on Saint-Barthélemy runway**

In the months preceding this serious incident and subsequently during the investigation, the BEA was notified of several air navigation incidents in the Saint-Barthélemy airport circuit, and notably several incidents where there had been a risk of a runway collision occurring.

The operator of PJ-WIX, Winair, indicated that the risk of collision with another aircraft is identified at Saint-Barthélemy due to the volume of activity and the lack of air traffic control. Therefore, crews are particularly made aware of and trained in compulsory position reporting, complying with the flight paths to enter an aerodrome circuit, and maintaining appropriate separation from other aircraft in the circuit. The operations manual reiterates the obligation to land after passing the decision point EDEN ROCK, which, according to the operator, necessitates an even greater safety margin in terms of separation. However, Winair's operations manual does not define criteria for carrying out a missed approach at this point, for example, if the runway is engaged.

### **2.4 Meteorological information**

The weather conditions reported at Saint-Barthélemy at 21:00, the day of the serious incident were wind from 090° of 6 kt, visibility greater than 10 km, a few clouds at 2,100 ft, temperature 28 °C, dewpoint 23 °C, QNH 1,015 hPa.

At 21:13, at Saint-Barthélemy airport, the sun's azimuth was 247° and its elevation above the horizon was 11°. For the crew of an aircraft on final to runway 28 (QFU 283), the sun was 36° to the left of the approach path. The end of runway 28, including the intersection with taxiway B, was in the shadow of the terrain located south-west of the airport.

The sun set at 21:42.

### 3 CONCLUSIONS

*The conclusions are solely based on the information which came to the knowledge of the BEA during the investigation.*

#### Scenario

Around one hour before Saint-Barthélemy airport closed, the crew of N590TW and then the crew of PJ-WIX, both on arrival to the airport, contacted the AFIS officer. Seven other arriving or departing aeroplanes transmitted on the frequency in the ten minutes preceding the serious incident.

The crew of PJ-WIX joined the RH base leg for runway 28 after extending the downwind leg with the intention of ensuring separation with N590TW which was preceding them on the LH base leg. In the base leg, the crew of PJ-WIX had visual contact with N590TW and then continued the approach by turning onto the final, only approximately 40 s after the latter.

At about the same time, the AFIS officer informed the crew of PJ-WIX that N590TW was still on the runway. The presence of another aeroplane at the holding point of taxiway "A" prevented the crew of N590TW from vacating via this taxiway which is the one usually taken to reach the "main" parking.

In his message, the AFIS officer, aware of this situation, did not provide traffic information concerning the aeroplane at holding point "A", this procedure not being set out in the Operations Manual. In his message, he indicated to the crew of PJ-WIX that the crew of N590TW has to vacate the runway via taxiway "D" which leads to the "general aviation" parking. He was not aware of the intentions of the crew of N590TW and his prerogatives as AFIS officer did not allow him to order them to vacate via "D" nor to ask the crew of PJ-WIX to carry out a missed approach. The crew of N590TW were not aware of the immediate proximity of the aeroplane that was following them.

During the final approach, the sun, slightly to the LH side of the runway axis and the shadow at the end of the runway probably prevented the crew of PJ-WIX from correctly seeing N590TW on the ground. The crew of the latter, without transmitting a message, carried out a U-turn to backtrack the runway with the intention of vacating via "B" to head to the main parking. When the AFIS officer transmitted a second time, information about an aeroplane present on the runway without specifying that it had made a U-turn, the crew of PH-WIX had reached EDEN ROCK which constitutes a decision point beyond which the approach cannot be rejected. The crew of PJ-WIX continued the approach without being certain that the runway would be vacant before they landed: the operator's procedures did not specify that the crew should carry out a missed approach if the runway was engaged when abeam EDEN ROCK. They landed while N590TW was still on the runway, although its crew had accelerated taxiing after the U-turn to vacate the runway as quickly as possible.

## **Contributing factors**

The following factors may have contributed to a commercial air transport aeroplane landing on a runway engaged by another commercial air transport aeroplane:

- insufficient separation left by the crew of the second aircraft during the approach, which offered no safety margin, especially at an aerodrome subject to various identified constraints;
- the possibility given to this crew, and to pilots in general, when the runway is engaged, to continue the approach abeam a point beyond which a missed approach is no longer possible;
- poor situational awareness on the part of the crews of the two aeroplanes directly involved, resulting in particular from an insufficient upward and downward information flow;
- the limited prerogatives of AFIS officers.

The number of movements, sometimes high over short periods, and the lack of traffic regulation increase the likelihood of a sudden concentration of aircraft in the airport circuit. In this context, and in the absence of an air traffic control service, it is up to the pilots themselves to assess the acceptability of separations and prevent collisions. This responsibility falls in part on commercial airline pilots, who through habit and in the absence of an explicit procedure from their operator may gradually reduce their safety margins.

***The BEA investigations are conducted with the sole objective of improving aviation safety and are not intended to apportion blame or liabilities.***