



**Accident** to Robin DR401-155 CD  
registered **F-GNXT**  
on 25 August 2017  
at Vinon (Var)

<sup>(1)</sup>Unless otherwise stated, all times given in this report are in local time.

<b>Time</b>	12:25 <sup>(1)</sup>
<b>Operator</b>	Manosque-Vinon flying club
<b>Type of flight</b>	General aviation
<b>Persons on board</b>	Pilot
<b>Consequences and damage</b>	Aeroplane severely damaged

*This is a courtesy translation by the BEA of the Final Report on the Safety Investigation published in March 2019. As accurate as the translation may be, the original text in French is the work of reference.*

**Non-stabilized approach, bounced landing,  
failure of nose landing gear**

**1 - HISTORY OF THE FLIGHT**

<sup>(2)</sup>Paved part of strip (205 m x 8 m) used for glider aerotow take-offs.

<sup>(3)</sup>For noise abatement reasons, the preferential QFU shown on the VAC chart is 281 with a wind of less than 2 m/s.

Returning from a cross-country flight, the pilot, inbound from the south-east, advised on the A/A frequency that he was two minutes from being overhead Vinon aerodrome; he then arrived over the aerodrome at a height of 1,300 ft in order to inspect the field. He observed that the wind sock was nearly vertical. He performed a wide left turn in descent passing west of the runway intersection and observed that there were people, vehicles and gliders present on runway 16 behind the tug strips<sup>(2)</sup>. As it seemed that the glider activity had not yet started, he positioned himself in order to begin the left-hand downwind leg to land on runway 28<sup>(3)</sup>.

When he was at a height of around 800 ft at the beginning of the downwind leg for runway 28, a tug plane towing a glider (combination) took off from runway 16 (see Figure 1, at 12:22:40). In the middle of the downwind leg, the F-GNXT pilot saw the combination climbing in his 10 o'clock below him (see Figure 1, at 12:23:05). Believing that the aircraft were on conflicting flight paths, he immediately reminded the starter and tug pilot on the A/A frequency of his presence in the aerodrome circuit for aeroplane runway 28. He received no reply. The combination then made a right-hand climbing turn.

When the F-GNXT pilot turned into the base leg, the pilot of a second tug plane towing a glider took off from runway 16 (see Figure 1, at 12:23:28).

When F-GNXT arrived in the last turn at a height of around 400 ft, the first combination were still performing a right-hand climbing turn south of runway 28 at a height of 600 ft to head northwards to the glider release sector situated to the north-east of the aerodrome. The second combination crossed runway 28 and were at a height of 120 ft also in a right-hand climbing turn. A motor glider was aligned on runway 20 and the pilot was about to take off (see Figure 1, at 12:24:05).

On coming out of the last turn, the F-GNXT pilot saw the second combination climbing below him. He hesitated going around, momentarily interrupted the descent and then decided to continue the approach by off setting his aiming point to the right to land on the unpaved runway. As the aeroplane was high on the approach slope, the pilot corrected the slope, configured full flaps and completely reduced thrust. He was slow to flare and was surprised by the first bounce of the aeroplane.

The aeroplane bounced a second time then, on the third contact with the runway, the nose landing gear failed and the propeller came into contact with the ground. The aeroplane came to a halt on the unpaved part of runway 28, just before the intersection with runway 02/20. The motor glider, which had taken off from runway 20, then flew over F-GNXT.

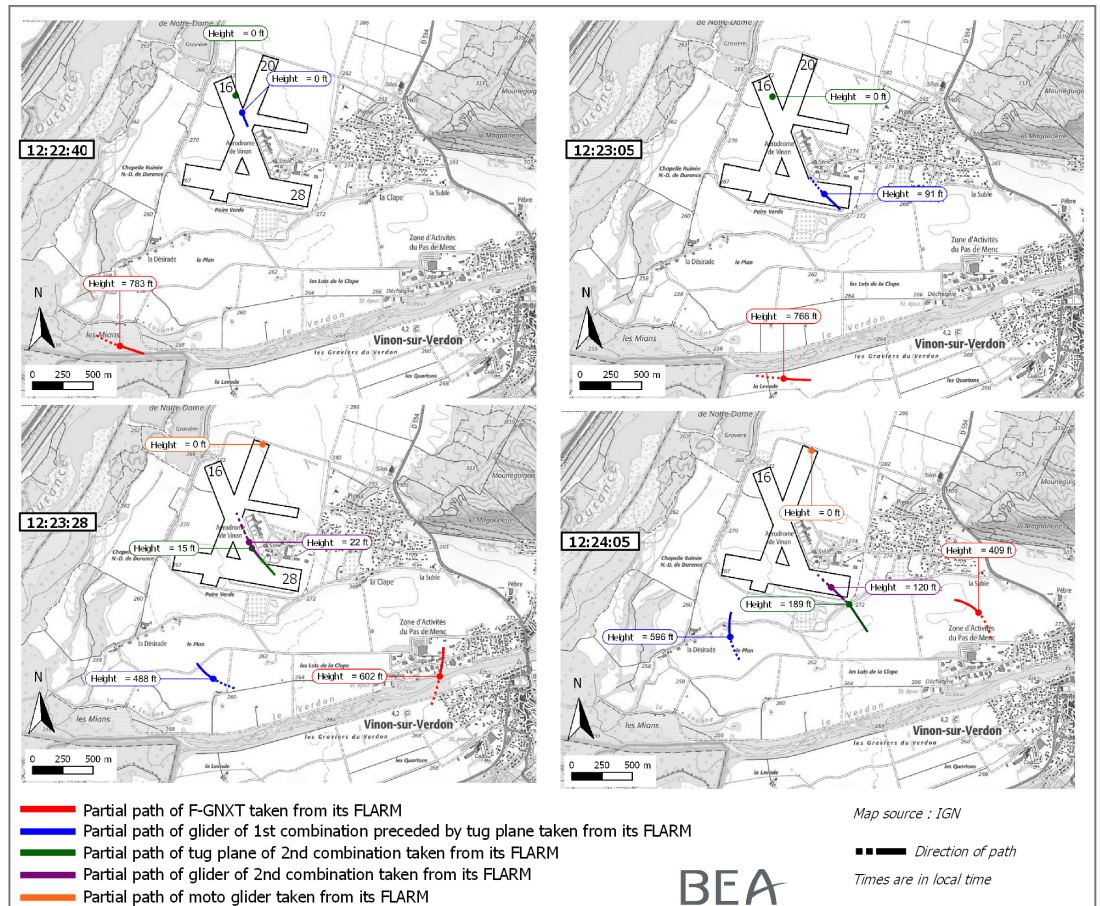


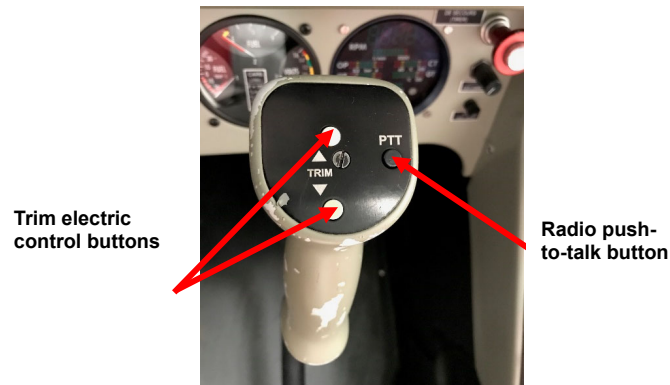
Figure 1: real time positions of aircraft

## 2 - ADDITIONAL INFORMATION

### 2.1 Aircraft information

The DR401 is a single power lever version of the DR400. There is only one power control installed on the central pedestal between the two sticks. In the left seat, the stick is therefore held with the left hand and the power control is moved with the right hand.

There are three buttons on the top of the stick (see Figure 2). The first two are positioned one under the other practically on the centreline of the stick. They control the electric trim. The third button is situated on the right side, it is the radio PTT.



Source: BEA

Figure 2: top of F-GNXT stick

*Note: Several reports had been made in the club following confusion between the buttons, the trim button having been pushed instead of the PTT button.*

### 2.2 F-GNXT pilot information

The pilot, holder of a Private Pilot Licence PPL(A) since 19 April 2016, had logged 142 flight hours of which 12 hours in the previous three months. He had obtained the “single power lever”<sup>(4)</sup> rating on 21 December 2016 and had subsequently logged 25 flights hours on type.

He had been based at Vinon aerodrome from the beginning of his training.

#### 2.3.1 General

A no fly zone situated four kilometres to the south of the aerodrome and the town of Vinon-sur-Verdon oblige pilots taking off from runway 16 to turn right shortly after take-off.

The aerodrome, situated on a former military airfield, is reserved for aircraft equipped with a radio. Neither the aerodrome’s A/A frequency nor the starter’s frequency are recorded.

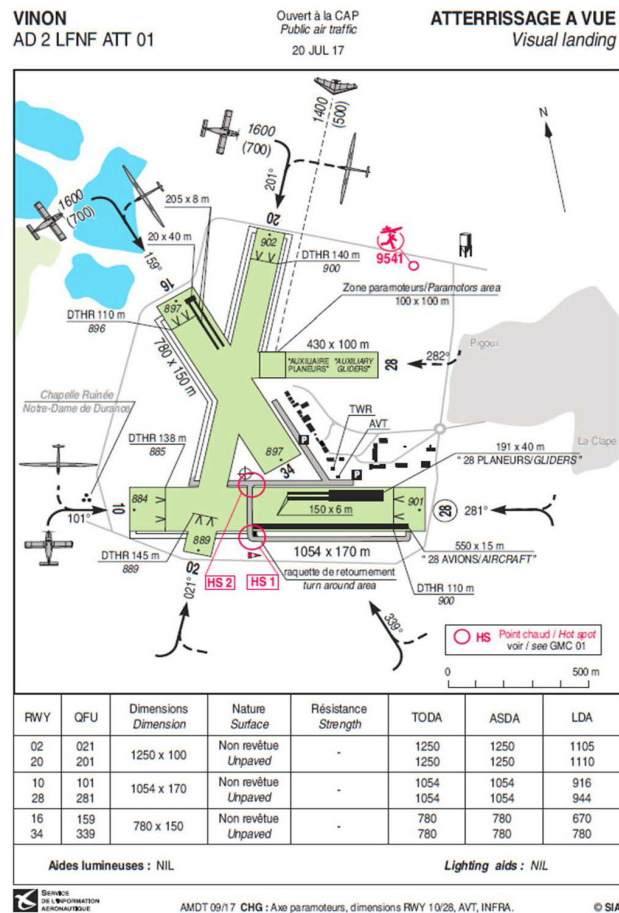
<sup>(4)</sup>To obtain this version rating, the pilot must first have a standard valid SEP land rating obtained on a two seater single engine aeroplane, provide proof of training and have the corresponding version recorded in his log book. This version rating is acquired for life.

The following aircraft types coexist on the aerodrome, within various associations:

- gliders;
- aeroplanes;
- amateur-built aircraft;
- ULMs (including powered paragliders);
- model aircraft.

There is also an association located on the aerodrome which services the aeroplanes and gliders.

The glider activity is predominant.



Source: AIS

Figure 3: VAC chart in force

The aerodrome has three intersecting grass runways and auxiliary runway 28 exclusively reserved for the landing of gliders. Preference is to be given to runway 28 when the wind is less than 2 m/s.

**Procédures et consignes particulières**  
 Roulage interdit hors RWY et TWY.  
 Pistes revêtues incluses dans les pistes non revêtues.  
 QFU préférentiel 281 par vent inférieur à 2 m/s cause limitation des nuisances dans la phase de montée initiale.  
 ACFT motopropulsés, sauf pour des raisons de sécurité, doivent éviter le survol de Vinon sur Verdon (notamment lors de l'utilisation du circuit RWY 10/28).  
 Après atterrissage dégager impérativement du côté du tour de piste avion.  
 Entraînements tours de piste inférieurs à 1600 ft interdits aux avions et ULM non basés.  
 Les avions et ULM non basés ne pourront pas faire plus de deux tours de piste.  
**La piste 28 auxiliaire est exclusivement réservée à l'atterrissage des planeurs au QFU 282.**  
 Pour une compatibilité avec le tour de piste planeur, à l'arrivée sur l'aérodrome, le tour de reconnaissance s'effectue à une altitude de 2500 ft .  
 Les avions remorqueurs peuvent atterrir sur la piste 16 alors que la piste 28 est en service.  
 L'attention des usagers est attirée sur le point de report TRAPEZE qui est un point de descente des remorqueurs.

Figure 4: excerpt from specific instructions of VAC chart

<sup>(5)</sup>The displaced threshold is situated at 110 m from the beginning of runway 16.

Several aerodrome users explained that the gliders are generally installed behind the paved tug strips<sup>(5)</sup> and that they leave the remaining width of the runway free to allow aeroplanes to land by not penalising the operation of the aerodrome.

### 2.3.2 Applicable regulations

<sup>(6)</sup>Modified decree of 28 August 2003 concerning the Conditions of Approval and Operating Procedures for Aerodromes. Decree of 10 July 2006 concerning the technical characteristics of certain land aerodromes used by fixed-wing aircraft.

The "CHEA" decree<sup>(6)</sup> prescribes the technical conditions and operating procedures of civilian aerodromes.

The "TAC" decree defines the specifications concerning the obstacle limitation surfaces and the physical characteristics of the runway and its surrounding areas.

The decision to approve an aerodrome runway is taken on completion of an inspection essentially covering the following points<sup>(7)</sup>: the obstacle limitation surfaces and obstacle clearance, the physical characteristics of the runway and its surrounding areas, the electrical power supply, radioelectric aid equipment, visual aid equipment, runway visual range or horizontal visibility and operating procedures.

<sup>(7)</sup>In the specific case of Vinon aerodrome, the opening decree constitutes an approval decision, as provided for by the CHEA.

A follow-up is then carried out, according to the provisions defined by the DSAC<sup>(8)</sup>, in order to ensure that the conditions prevailing at the time of the approval decision, with or without restrictions of use, are still present. In the scope of this follow-up, when it is observed that the conditions are no longer present, the DSAC can take precautionary measures pending either the conditions being restored or proposals, from the operators concerned, of appropriate operational measures or restrictions showing that the operating safety for aircraft is not compromised. These precautionary measures are notified to the aerodrome operators.

<sup>(8)</sup>Direction de la Sécurité de l'Aviation Civile (French civil aviation safety directorate).

<sup>(9)</sup>Mission de l'Aviation  
Légère, Générale  
et des Hélicoptères  
(Light aviation,  
general aviation and  
helicopter mission)  
of the DGAC.

The DGAC was contacted by the French gliding federation (FFVP) about the difficulties a large number of aerodromes equipped with glider surfaces had with strictly complying with the "TAC" decree.

A working group led by a DSAC gliding expert and associating, among other entities, the FFVP and the MALGH<sup>(9)</sup>, was thus given the responsibility of studying the recurrent problems which may exist on glider surfaces with a view to proposing acceptable means of compliance and possible regulatory changes.

On the basis of the conclusions of this group's work, a letter No 10/113/DSAC/ANA was written on 16 June 2010 by the DSAC defining, in particular, in its appendix 1, the technical characteristics and operating conditions of the infrastructures on the aerodromes used by gliders.

In this appendix, it was specified, in particular, that:

- no simultaneous movement (take-off or landing) may be performed on a runway;
- the runway was to be clear during landing and take-off operations, the runway being considered as clear when no moving object (aeroplane, glider or other vehicle) was within the runway safety area;
- the aerodrome operating instructions, known to all the users based at the aerodrome and users from nearby aerodromes, in particular for aerodromes with restricted use open to neighbouring aerodromes, are drawn up regarding:
  - the conditions for sharing the aerodrome infrastructures;
  - the conditions for the non-simultaneous use of parallel runways.

Furthermore, the letter stated that it was planned that the provisions contained in its appendices would be incorporated in regulatory texts.

### 2.3.3 Aerodrome operation

On 1 January 2013, the installations, maintenance and management of the aerodrome were assigned, by means of an agreement<sup>(10)</sup> concluded with the minister responsible for civil aviation, to the Provence Alpes-Côte d'Azur Regional Council who entrusted the operation of the aerodrome to the Vinon-sur-Verdon aerodrome users association.

This association represents all the associations carrying out flying activities. As designated operator for the management of Vinon aerodrome, its mission is to coordinate the different activities and to define the rules to be complied with by the users. This mission must be carried out in collaboration with all the aerodrome users who can be consulted for their views.

## 2.4 Meteorological information

The wind data provided by Météo France as part of the investigation and taken from the recordings of the Vinon weather station was the following:

- at 12:00: average wind from 290° at 3 kt, maximum wind from 260° at 7 kt;
- at 13:00: average wind from 090° at 3 kt, maximum wind from 170° at 8 kt.

<sup>(10)</sup>This agreement was renewed by resolution in the Regional Council meeting of 16 December 2016.

<sup>(11)</sup>Commission Implementing Regulation of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation (known as "SERA")

<sup>(12)</sup>Order of 17 July 1992 concerning the general air traffic procedures for the use of aerodromes by aircraft.

<sup>(13)</sup>Aerodrome Flight Information Service.

## 2.5 Operational regulations

### 2.5.1 Giving way

Implementing regulation (EU) No 923/2012<sup>(11)</sup> states that an aircraft in flight, or operating on the ground or water, shall give way to aircraft landing or in the final stages of an approach to land.

### 2.5.2 Joining procedure

National regulations<sup>(12)</sup> require on an uncontrolled aerodrome that:

- An aerodrome circuit is joined taking into account the aircraft following the said circuit as well as the aircraft that may be following the other aerodrome circuits.
- After assessing the parameters by inspecting the aerodrome, and observing the position of other aircraft manoeuvring in the aerodrome traffic, the pilot-in-charge must join the beginning of the downwind leg at the altitude of the published circuit while ensuring a visual separation with the aircraft already engaged in the aerodrome traffic and giving way to them.

### 2.5.3 Use of radio

The pilot-in-charge of an aircraft equipped with a radio must transmit position reports, indicate his intentions and advise the AFIS<sup>(13)</sup> of all subsequent modifications or if there is no AFIS, advise of these on the A/A frequency.

However, if there is a doubt, it is essential for flight safety that there is a bilateral radio exchange between pilots in order to eliminate any ambiguities as to each pilot's intentions.

## 2.6 Distribution of roles during a tug plane-glider combination take-off

The 2017 tug pilot practical guide issued by the FFVP groups all the necessary information to effectively carry out glider towing operations in the best possible safety conditions. It constitutes the reference document associated with the FFVP's tug pilot training method.

### 2.6.1 Tug pilot

The tug pilot waits for the glider to be ready, wings horizontal and air brakes retracted, strictly aligned on the take-off axis. It is recommended that the glider pilot reports by radio that he is ready. The tug pilot can then take off at his discretion. He is the pilot in charge of the combination and is responsible for the conduct of the flight, in particular the avoiding of collisions with aircraft present in the aerodrome traffic.

Moreover, the Guide identifies a risk of collision when there are simultaneous, uncoordinated movements on the aerodromes where several activities take place, and on those with several take-off and landing paths. For aerodromes with several take-off and landing paths, it recommends ensuring that there is no antagonistic traffic before applying thrust, and setting up coordination procedures. To this end, before the application of thrust, the tug pilot must carefully listen to the radio announcements made and, if there is a doubt, he must postpone his action.

This responsibility must not however minimize the role of the glider pilot in looking for traffic and preventing collisions.

### 2.6.2 Glider pilot

The glider pilot is the one who gives the green light for take-off when he is ready. He informs the tug pilot of this by radio. He often has a wider field of vision than the tug pilot and thus actively participates in surveying the sky. He advises of any traffic which might interfere with the path of the combination.

### 2.6.3 Wing runner

When a wing runner is present, he stands next to the glider wing and holds it on the ground pending the glider's take-off. When the pilot gives the thumbs up to show that he is ready to take-off and that the wing can be raised, the wing runner systematically checks that the take-off path is free and that there are no aircraft in the downwind leg, close base leg or final. He next checks that all is normal on the glider which is going to take-off, in particular that the airbrakes are retracted and the canopy locked, he then raises the wing so that it is horizontal which is the departure signal for the tug pilot.

### 2.6.4 Session manager

The session manager manages the activity and monitors the take-offs and landings. He has a vehicle equipped with a VHF radio, situated close to the tug take-off strip, often referred to as the starter.

## 2.7 Distribution of roles in the Vinon gliding club the day of the accident

### 2.7.1 Session manager

The club chief pilot was acting as session manager. He was also, however, the tug pilot for the second combination to replace the club's president at the latter's request.

### 2.7.2 Starter

The president was standing outside the runway vehicle acting as starter with a hand-held VHF radio. He was on runway 16 near the gliders and tug planes. His role was solely limited to assigning gliders to tug planes and monitoring the A/A frequency.

He was helped by a student pilot present in the runway vehicle who filled in the flight log of the day and also monitored the aerodrome's A/A frequency 118.15 MHz and the frequency reserved for gliders 130.12 MHz<sup>(14)</sup> using two separate VHF radio units. The student pilot had to be ready to alert the president if there was an urgent need to stop the take-off of a combination, if an aeroplane was in approach to land on runway 16 or if there was movement on runway 20.

There was no briefing between them before the start of the activity.

<sup>(14)</sup>The starter does not have a specific frequency, he monitors the A/A frequency and the frequency of the gliders in flight above 1,000 m QNH.



## 2.8 Witness statements

### 2.8.1 F-GNXT pilot

The pilot explained that his choice to land on runway 28 was supported by the fact that the gliding activity had not, according to him, yet started on runway 16 and that there was no other aircraft in flight in the aerodrome traffic. He thought he would have enough time to land before the first take-offs and assumed that the glider pilots were going to let him land. In addition, as no one had replied to him, he was concerned that he would not be seen by the glider pilots if he landed on runway 16 as they would have their backs to him when he was in final.

He said that he was not comfortable with the procedure for joining the circuit when the gliding activity was in progress at the aerodrome and that this had always bothered him. He added that he had asked his instructors several times for more information about the use of the runways when the gliding activity was in progress at the aerodrome. He had been told that it was possible to use the same runway as the gliders by inserting himself between the take-offs and landings. For two years he had never had to land on runway 16 with the gliding activity in progress. He had never used runway 10.

He said that he had been destabilized by the first combination which he thought was conflictual. He thought he pulled on the elevator control to avoid the combination which was lower than him in his 10 o'clock and climbing with a converging path. He did not remember hearing the pilot of the first tug plane announce his take-off.

After the last turn, concerned about colliding with the aircraft or the cable of the second combination, he reduced the rate of descent of the aircraft and made a right dog leg to land on the grass part of runway 28 between the paved part reserved for aeroplanes and the paved strips reserved for gliders, behind the second combination which was taking off. He had heard the tug pilot announce his take-off.

According to him, the starter only intervened on the A/A frequency after the accident to stop take-offs.

He said that he did not perform a go-around as he thought he would be able to successfully land despite the excess speed and the approach slope which was too steep. He did not exclude the possibility of having eased the stick forward after the first bounce. He had never been confronted with a bounce at landing and did not know how to react in such a situation.

He declared that he had made several announcements on the A/A frequency, the first time when two minutes from being overhead the aerodrome, then in the downwind leg and finally in final. He said that he was right handed but confirmed that in a traffic pattern he holds the stick with the left hand as he keeps the right hand on the power control. He added that in the past he had already mistaken one of the trim control buttons and the PTT. He does not exclude the hypothesis of a confusion between the buttons.

### 2.8.2 Club president and his assistant

The club president said that in the morning's briefing of that day, the weather forecast gave a wind of 150° for 10 kt. Runway 16 had therefore been chosen. He added that 80% of the time, the gliders took off from runway 28.

He specified that there were no instructions for landing on runway 28 when gliders were taking off from runway 16.

He affirmed that neither he nor the student pilot who was assisting him in the starter heard the F-GNXT pilot report on the A/A frequency. They only saw the aeroplane after it had landed when it had come to a halt at the runway intersection.

### 2.8.3 Pilots of first combination

The pilots said that they had neither seen nor heard the pilot report on the A/A frequency. The tug pilot said that he monitored the A/A frequency and that the frequency 130.12 Mhz was reserved for the gliders and starter so that they could communicate with each other in flight. He affirmed that he had reported his intention to take-off on the A/A frequency.

### 2.8.4 Pilots of second combination

The tug pilot affirmed that he had not once heard the F-GNXT pilot on the radio and said that he only saw the aeroplane when it was in long final, on his left-hand side when he flew over runway 28. He had not seen it fly overhead or when it was in the downwind leg and base leg. He affirmed that he had reported his intention to take-off. He added that all the glider pilots had been instructed to intervene if they detected a conflicting aeroplane and that if the pilot of the glider that he was towing had alerted him about the presence of a potentially conflicting aeroplane in the aerodrome traffic, he would not have taken off.

The glider pilot said that he had not seen the aeroplane but that he had heard the F-GNXT pilot report in final when the combination took off. However, he did not advise the tug pilot of this in order not to saturate the A/A frequency during the take-offs.

### 2.8.5 Motor glider pilot

The pilot took off from runway 20 at the same time as the F-GNXT pilot landed on runway 28. He said that he heard the latter report in final for runway 28 but that he only saw him after the accident when flying over the runway intersection and practically passing over him. He affirmed that he had coordinated his take-off with the chief pilot and that the starter had cleared him to start up his engine.

### 2.8.6 Other witness

The chief pilot from the Manosque-Vinon flying club was present on the ground, occupied with supervising a local solo flight. He was listening to the A/A frequency and confirmed that he had heard the F-GNXT pilot report when he was two minutes from being overhead Vinon aerodrome. He can no longer remember if he heard the pilot again as he was occupied with what he was doing. He explained that the glider pilots started to position themselves on runway 16 when F-GNXT was overhead the aerodrome and that take-offs started when the latter arrived in the downwind leg for runway 28.

## 2.10 Aircraft FLARM data

All the aircraft were equipped with a FLARM. The data from each aircraft was downloaded and analysed except for that of the tow plane of the first combination. The readout of the data shows that there was no risk of collision with this first combination.

The readout of the FLARM data of F-GNXT shows that the aeroplane climbed around 100 ft in the middle of the downwind leg, at the time when he said that he had transmitted a position message. At the time of landing, his ground speed was around 135 km/h<sup>(15)</sup>.

<sup>(15)</sup>The flying club check list used by the pilot indicates that the touchdown speed must be 120 km/h and increased according to the strength of the wind.

<sup>(16)</sup>DSAC South-East.

<sup>(17)</sup>A major deviation is a non-conformity with respect to the regulations in force and requires the implementation of immediate precautionary measures. When a deviation of this type is observed by an agent in the scope of any oversight action, he must immediately inform his management who will apply the procedure for processing major deviations.

<sup>(18)</sup>The aerodrome had, however, been restricted in its use on this occasion.

## 2.11 Oversight and coordination of aerodrome activities

As part of the Vinon aerodrome approval follow-up, the DSAC-SE<sup>(16)</sup> had carried out an inspection from 26 to 28 April 2017 to check the conformity of the infrastructure installations and operating procedures with the applicable regulations.

Several non-conformities were observed during this inspection. One of these was the “potentially major” deviation<sup>(17)</sup> linked to the simultaneous use of runway 28 by aeroplanes when gliders were engaged on it. It was also observed that no aerodrome operating instructions had been put in place by the operator. Each flying club wrote its own instructions and the aerodrome operator did not have knowledge of them. The inspection focused on the simultaneous use of a runway by several aircraft and did not identify the possibility of activities coexisting on intersecting runways.

The deviation was notified to the aerodrome operator by the DSAC-SE in the audit closing meeting of 28 April 2017 and then in writing on 2 May 2017. The operator had to provide proof before 11 May 2017 that the operating instructions in place allowed the simultaneous use of runways 10/28 or 16/34 by several aircraft with a satisfactory safety level and that the corresponding instructions were known to the users. According to the operator’s reply, the DSAC reserved the possibility of classifying the deviation as major and asking the operator to prohibit the simultaneous use of these runways. The operator replied to the DSAC-SE on 8 May 2017 stating that instructions existed since the gliding world championships organized at the aerodrome in 2006<sup>(18)</sup> and that a request to update the VAC chart was in progress to inform users of this. These instructions, drawn up for the tug pilots, concerned the alternative use of runway 28 for taking off and runway 16 for landing and gave detailed information about the various tug plane circuits.

Six months later, on 8 November 2017, in reply, the DSAC-SE notified the inspection report to the aerodrome operator. This report mentioned, in particular, that the deviation had been classified as major despite the risk reduction measures implemented by the operator. It asked the operator to resolve the deviation as quickly as possible by taking, in particular, measures to prohibit the simultaneous use of a runway by several aircraft. The operator was asked for a corrective action plan within two months. The latter replied on 10 January 2018 that the instructions for the gliding activity were being revised and that a new chief pilot of the gliding club had been appointed. On 26 February 2018, it transmitted its corrective action plan which, in particular, provided for the organization of a consultation meeting with the instructors from the aerodrome and other aerodromes with the DSAC-SE inspector pilot to envisage amendments to the specific instructions of the Vinon aerodrome. This meeting did not take place.

On 12 April 2018, the DSAC-SE replied to the operator that no proposal had been made to make aerodrome operation compliant and that no applicable instructions complying with regulations had been produced for all the users of the aerodrome. The operator was enjoined by the DSAC-SE to define a new configuration for the use of the runways and to implement relevant corrective actions at the latest, before the glider activity resumed, failing which the DSAC would impose operating restrictions. The DSAC-SE received a draft corrective action plan at the end of November 2018. It is currently being studied by the DSAC; to date, the latter has not imposed operating restrictions at the aerodrome.

### 3 - LESSONS LEARNED AND CONCLUSIONS

#### 3.1 Management of landing

On continuing a non-stabilized approach with an approach slope which was too steep and a speed in final which was too high, the management of the flare was tricky. The late flare was followed by a hard touchdown and then a first bounce. The pilot probably eased the stick forward after the bounce, generating a nose-down attitude conducive to a second bounce and then the failure of the nose landing gear on the third contact with the runway. Never having been confronted with a bounced landing and not knowing the actions to be carried out in such a case, he may have made inappropriate inputs on the controls, leading to a hard landing and the failure of the nose landing gear.

The pilot's decision to extend the base leg and offset the initially planned aiming point to manage what he considered to be an insufficient gap with the second combination, destabilized the final approach. This shift in attention may have occurred to the detriment of the monitoring of the flight parameters, resulting in a landing being carried out with an excessive speed and slope.

The pilot joined the aerodrome circuit without realizing that the gliding activity was on the point of starting. In the downwind leg, confronted with this unplanned situation, the element of surprise may have sufficiently destabilized him so as to have affected his discernment. He thus did not know how to react and then encountered difficulties with holding the aeroplane's vertical path on the nominal descent slope and as a consequence, controlling his speed in final. The fact of not feeling comfortable in a situation of dense glider activity may have led him to not fly a go-around during the approach.

Since the accident, the pilot has reinforced his practical landing skills in the company of an instructor. He subsequently realised that he had previously had no knowledge of the techniques to recover from hard bounces during a landing which could have contributed to him improvising in a situation of stress.

#### 3.2 Use of radio and prevention of collisions

During the glider take-off phases, certain pilots are in the habit of transmitting on the A/A frequency as little as possible so as not to saturate it. This is the case of the pilot of the second glider who had heard the F-GNXT pilot check in for runway 28 but did not warn the tug pilot on the A/A frequency. The sharing of information contributing to the prevention of collisions and the detection of other aircraft present in the aerodrome traffic nevertheless constitutes a strong safety principle.

Furthermore, the tug pilot of the second combination had the role of session manager. In this respect, he was responsible for the activity, and the monitoring of take-offs and landings. The club president and his starter assistant had limited their action to pairing the gliders with their tug planes and monitoring the frequency. Consequently, the monitoring and control function of the glider activity was implicitly divided and not assumed, the session manager not being in a position to control all of the activity. This unofficial sharing of tasks thus contributed to the other aircraft in the aerodrome traffic not being taken into account. This led to the combination take-offs starting when F-GNXT was in final approach for runway 28.

Finally, it is possible that certain messages from the F-GNXT pilot were not transmitted due to a confusion between the trim control and PTT buttons. The pilot's stress and the ergonomics of the stick may have contributed to this confusion. The investigation was not able to determine the reasons why the glider pilots may not have heard the other exchanges, heard, moreover, by other people.

### **3.3 Glider pilots taking into account presence of an aeroplane in the aerodrome circuit**

Neither the starter nor the tug pilots took into consideration the aeroplane which was in the aerodrome circuit, in approach and then landing on runway 28. The glider pilots did not concern themselves with the activity in progress on runway 10/28 as usually the users use the same runway as them. They solely concerned themselves with the activity in progress on runway 16/34, in particular the final approaches and landings.

### **3.4 Aerodrome operating conditions and oversight by competent authority**

The aerodrome operator, although representing all the platform users, had been unable to write and publish instructions clearly defining the aerodrome's operating conditions. The coexistence of several procedures specific to each activity meant that the risk arising from the coexistence of these multiple activities was not managed, as illustrated by this accident. This coexistence notably resulted in the simultaneous but uncoordinated use of intersecting runways by several aircraft.

The DSAC-SE had for their part identified the risk linked to the simultaneous use of the same runway by several aircraft. Although this deviation cannot be explicitly and directly connected to the accident, the absence of strong prompt action by the DSAC-SE contributed to a lasting situation in which the various stakeholders seem to be in competition rather than in a spirit of safely sharing a common space. Furthermore, the risk of using several runways simultaneously was not identified by the DSAC-SE.

### **3.5 Provisions applicable to aerodromes used by gliders**

The letter of 16 June 2010 describing the points requiring the vigilance of the DSAC-IRs<sup>(19)</sup> in their oversight activities led the DSAC-SE to focus on these points to the detriment of risks which could exist locally on certain aerodromes. Thus, the audit of the Vinon aerodrome had identified the risk linked to the simultaneous use of parallel runways but not that linked to the simultaneous use of intersecting runways.

<sup>(19)</sup>DSAC Regional Offices.

## 4 - RECOMMENDATIONS

*Note: in accordance with the provisions of Article 17.3 of Regulation No 996/2010 of the European Parliament and of the Council of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation, a safety recommendation in no case creates a presumption of fault or liability in an accident, serious incident or incident. The addressees of safety recommendation shall inform the safety investigation authority which issued the recommendations of the actions taken or under consideration for their implementation, under the conditions described in Article 18 of the aforementioned regulation.*

This event brings to light the problem of multiple activities coexisting on an uncontrolled aerodrome.

In 2008, the BEA issued a bulletin “*Rapprochement d’activités*”<sup>(20)</sup> which describes five incidents illustrating the risks linked to coexisting activities.

In the “*Rapport sur la sécurité aérienne en 2015*”<sup>(21)</sup> published by the DSAC, it is specified that the coexistence of multiple activities on uncontrolled aerodromes, in particular those open to public air traffic and having several runways, generates greater risks of ground and in flight collisions than elsewhere. Two fatal accidents and a serious incident are mentioned in the report to illustrate this problem. In these three events, several activities using different runways or landing areas were being carried out simultaneously. The pilots were based on the aerodrome and were aware that another aviation activity was in progress. The investigations showed that the inadequate management of this coexistence contributed to these accidents.

The investigation into the accident to F-GNXT showed that the use of the A/A by the glider pilots and the F-GNXT pilot was ineffective. Moreover, the prior organization of the gliding club did not allow the effective implementation of the see and avoid principle. This principle is nevertheless essential in the absence of a control service or an AFIS agent at the Vinon aerodrome which has several runways and several circuits and where several aviation activities occur simultaneously.

### 4.1 Coexistence of multiple activities on uncontrolled aerodromes

The coexistence of users carrying out different aviation activities and their absence of coordination makes for complexity and can directly or indirectly lead to accidents. This problem must absolutely be taken into account by the aerodrome users, through a clarification of the existing risks, in particular those linked to the use of intersecting runways.

Consequently, the BEA recommends that:

- **The operator of Vinon aerodrome, working with the users associations based at the aerodrome, define the co-activity procedures at this aerodrome and inform users using the most appropriate channels, of the associated management rules.**  
**[Recommendation FRAN-2019-005]**
- **The DSAC, working with the Aviation federation safety boards, carry out a campaign to make aerodrome operators aware of the risks linked to co-activity and in particular those concerning the use of intersecting runways, and encourage the operators to locally define the associated management measures.**  
**[Recommendation FRAN-2019-006]**

<sup>(20)</sup> Reconciling Activities (available in French) <https://www.bea.aero/fileadmin/documents/recinfo/pdf/recinfo.2008.08.pdf>

<sup>(21)</sup> Report on aviation safety in 2015 (available in French) [https://www.ecologique-solidaire.gouv.fr/sites/default/files/rapport\\_securite\\_aerienne\\_2015.pdf](https://www.ecologique-solidaire.gouv.fr/sites/default/files/rapport_securite_aerienne_2015.pdf)

## 4.2 Regulations

The investigation showed that the provisions brought to the attention of the DSAC-IRs in appendix 1 to letter No 10/113/DSAC/ANA of 16 June 2010 were not included in the regulations and moreover, that the risks linked with the simultaneous use of two intersecting runways were not identified in this appendix.

The absence of regulations taking into account the risks linked to the simultaneous use of intersecting runways should therefore be rectified.

Consequently, the BEA recommends that:

- **The DGAC reinforce the normative status of the provisions contained in the appendices to letter No 10/113/DSAC/ANA of 16 June 2010 and regulate the conditions of simultaneous operation of an intersecting runway system.**  
**[Recommendation FRAN-2019-007]**
- **The DSAC ensure that there are provisions to bring to the users' knowledge by the most appropriate channels, the specific instructions for using runways.**  
**[Recommendation FRAN-2019-008]**