

OFFICE OF THE COMMISSIONERS

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Safety recommendation: AIC 20-R17/20-1004

Addressed to: Mission Aviation Fellowship (MAF) PNG Limited

Date issued: 12 August 2020

Investigation link: AIC 20-1004

Action status: Issued

Accident Background

On 19 March 2020, at 03:10 UTC (13:10 local time), a Cessna 208 Caravan aircraft, registered P2-MAF, owned and operated by Mission Aviation Fellowship (MAF) PNG Limited, conducted a VFR non-scheduled passenger flight operation from Kompiam to Yenkisa, Enga Province. During its landing roll at Yenkisa strip 32, the aircraft suffered a runway excursion. During investigation interview, the pilot explained that towards the end of the final approach, while on flaps 30 and at an airspeed of 71 kt, he determined that he had come too close to a protruding tree that stood in his flight path. The tree was about 100 m from the threshold.

Safety deficiency description

RAA had last carried out a survey of Yenkisa Airstrip in May 2019. The survey was done in accordance with CASA PNG AC139-6 which involved the assessment of the four different Airstrip OLS. Section 3.2 Take-off Climb/ Approach Surface, paragraph 3.2.1 states that each runway should have a take-off, climb and approach surface which should:

- a) Rise from the end of the runway strip; and
- b) Be obstacle free above a gradient of 1:20 (5%); and
- c) Extend horizontally 600m from the inner edge; and
- *d) Have sides that are splayed outwards at the rate of 1:20 (5%); and*
- e) Not turn before 300m from the inner edge, if a turn is necessary.

The survey carried out by RAA involved measuring the Approach surface OLS using a combination of a laser rangefinder to measure a horizontal 160m clearway before the threshold, and an inclinometer used at an angle of 2.86° from the threshold of the runway to measure the 1:20 (5%) gradient slope. Obstacles seen to be penetrating the measured OLS were trees just before the 32 strip threshold.

Locals within the community were subsequently advised by RAA to clear the trees that posed as an obstruction along the approach OLS. RAA informed AIC that the Yenkisa local airstrip maintenance officer reported that the trees were cut, but was unable to provide supporting evidence to the investigation.

According to RAA records, a subsequent airstrip inspection was carried out at Yenkisa Airstrip on 21 February 2020. The inspection rendered the airstrip as "OK". However, RAA stated that the inspection was conducted by a mechanic who was not equipped with the specific survey tools.

During the investigation, MAF stated that none of their pilots operating flights into Yenkisa strip 31 have submitted hazard reports regarding hazards identified along the approach path.

The investigation determined that due to the lack of effective action as a result of RAA survey, with regard to cutting the trees that were penetrating the approach OLS for Yenkisa strip 31, and the lack of hazard reports from MAF pilots operating into Yenkisa Airstrip related to protruding trees or obstacles in the approach path, the trees remained as obstacles and the pilot was unaware of them before the approach that resulted in the accident.

Recommendation number AIC 20-R17/20-1004 to MAF

The PNG Accident Investigation Commission (AIC) recommends that Mission Aviation Fellowship PNG (MAF) should improve the hazard identification process and procedures, to ensure that hazards are captured and their associated risks managed, especially in the context of operations into advanced airstrips like Yenkisa.

Action requested

The AIC requests that MAF note recommendation AIC 20-R17/20-1004, and provide a response to the AIC within 90 days, but no later than 10/11/2020, and explain including with evidence how MAF has addressed the safety deficiency identified in Safety Recommendation AIC 20-R17/20-1004.

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Hubert Namani, LLB Chief Commissioner 12 August 2020

Closing Statement

On 10 November 2020, MAF responded to PNG AIC with supporting evidence with regard to the deficiency identified in the Safety Recommendation AIC 20-R17/20-1004.

MAF identified and highlighted the following issues that have hampered the effectivity of their existing hazard identification process:

- 1. We have had a significant number of new pilots to the program. Because of their lack of PNG experience, they are not as aware of the hazards as experienced pilots.
- 2. We have not completed airstrip surveys at most airstrips for some time and therefore a number of airstrips have had hazards that some pilots were aware of, but other pilots were not. Some of the hazards were not mentioned in the airstrip charts.
- 3. Many of the new pilots had not been trained in airstrip surveys which is necessary in order that our airstrips can be surveyed regularly, but also it raises awareness within the pilot pool of the required airstrip standard and also what hazards could be present. It provides them with a benchmark of what items to specifically look at when assessing airstrips and how to assess the hazards against risk. It also heightens their awareness of the hazards when landing at airstrips as

they do their aerial inspections and then after landing as they consider their take off performance calculations.

4. Our Internal Notam system in the past did not provide immediate information to the pilots. It required that the FOM send out the Notams manually and this sometimes only happened once a week or once every two weeks.

Based on the issues identified by MAF above, the following actions, with provided evidence, were taken by MAF to address them:

- 1. Although we can't avoid getting pilots to PNG with no PNG experience, we can ensure that they are trained adequately and made aware of hazards at airstrips.
- 2. We are conducting a very comprehensive airstrip survey process across the country where all the airstrips will be surveyed before continued operations. The survey procedure consists of the following:
 - a. Recording the actual airstrip dimensions, the detail of flyover areas (including obstacles) and recording anything else that is significant regarding the surface, drains, roughness windsock etc. (See attached sample survey report form).
 - b. The ground penetration tests. These are conducted by the RAA and they provide a report on the surface and sub-surface (see attached sample DCP [Dynamic Cone Penetration] report).
 - c. A risk assessment, conducted initially by the surveyor, reviewed by the Program Safety Officer and then checked by the Program Safety Manager and Flight Operations Manager before sign off for operations.
 - d. Updating of the airstrip chart by the Flight Operations Manager to ensure that the hazards are mentioned and that the chart accurately reflects the data from the survey and additional conditions as mentioned in the Risk Assessment.
- 3. This procedure ensures that the condition of the airstrip is known and the airstrip chart adequately reflects this information. (See attached documents for survey and risk assessment samples)
- 4. There is also now a mandatory airstrip review date after 2 years. If a review (risk assessment) of the airstrip is not carried out before this expiry date, the airstrip will automatically be closed. This is achieved through our Application on the EFB that displays the airstrip data. This ensures that data is regularly updated and hazards are reviewed and updated every 2 years. A review is normally accompanied by a resurvey to ensure that new data is obtained. (See attached screen shots showing the airstrip data and review dates)
- 5. All pilots have received Survey training. This is comprehensive and consists of a day of classroom lectures and interaction where they are taken through the theory of the airstrips standards (MAF and CASA) and are then taught how to conduct a survey and then complete the risk assessment. They are also then required to do a number of practical surveys to demonstrate proficiency with the process. If the data they send in after surveys is not acceptable, then the pilot is given top-up training to ensure that they are providing good data. (See the attached files for samples of the Survey training course)
- 6. We have revised the Notam system to automate it. When a pilot creates a Notam, it will automatically become active once the EFB is synchronised at the end of the day and all pilots will receive the Notam. Only the FOM can cancel a Notam. These Notams are also automatically emailed to a pre-set email list so that pilots, bases, operations staff and external organisations will receive the Notams as individual emails. This includes cancellations. When required the FOM can email out a complete list. At any time a pilot can look on the EFB and get a complete Notam list. Operations staff can do the same. Closure Notams will automatically close an airstrip in the airstrip charts via the application. (See screen shots for examples)
- 7. The application has a note feature to provide pilots with additional information that is pertinent, but not necessarily a Notam. This adds to a pilot's awareness of the airstrip and potential hazards. If necessary a note can be upgraded to a Notam.
- 8. Our pilots have been requested to report via our SMS system all aborted take offs, go arounds, boggings and other significant hazards that they encounter. Trends can then be monitored. These

are items that could indicate a hazard at an airstrip. For example repeated go arounds due to wind would indicate that the strip is prone to turbulent conditions and this can then be mentioned in the airstrip chart and if necessary additional mitigation steps could be included like morning curfews or only experienced pilots being allowed to fly there.

PNG Accident Investigation Commission (AIC) assessment of the response from Mission Aviation Fellowship PNG Ltd (MAF)

According to AIC assessment, the information provided by MAF indicates that its hazard identification process has been reinforced through implementation of new procedures and processes.

The AIC assigned this response as *satisfactory* rating and recorded the **Status of the AIC Recommendation**: **CLOSED RESPONSE ACCEPTED**.

Hubert Namani, LLB Chief Commissioner 09 March 2021