KOMITE NASIONAL KESELAMATAN TRANSPORTASI
REPUBLIC OF INDONESIA

PRELIMINARY

KNKT.20.01.02.04

Aircraft Serious Incident Investigation Report

PT. Smart Cakrawala Aviation

PK-SNP, Cessna 208B (EX)

Kenyam Airstrip, Papua

Republic of Indonesia

21 January 2020

2020

This Preliminary Report was produced by the Komite Nasional Keselamatan Transportasi (KNKT), Transportation Building, 3rd Floor, Jalan Medan Merdeka Timur No. 5 Jakarta 10110, Indonesia.

The report is based upon the initial investigation carried out by the KNKT in accordance with Annex 13 to the Convention on International Civil Aviation Organization, the Indonesian Aviation Act (UU No. 1/2009) and Government Regulation (PP No. 62/2013).

The preliminary report consists of factual information collected until the preliminary report published. This report will not include analysis and conclusion.

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Jakarta, 13 March 2020
KOMITE NASIONAL
KESELAMATAN TRANSPORTASI
CHAIRMAN

SOERJANTO TJAHJONO

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ABBREVIATIONS AND DEFINITIONS

AFM	:	Aircraft Flight Manual
AFMS	:	Approved Flight Manual Supplement
AIP	:	Aeronautical Information Publication
AOC	:	Air Operator Certificate
APE	:	Aircraft Payload Extender
APP	:	Approach
C of A	:	Certificate of Airworthiness
C of R	:	Certificate of Registration
CASR	:	Civil Aviation Safety Regulation
CPL	:	Commercial Pilot License
CVDR	:	Cockpit Voice and Data Recorder
EGPWS	:	Enhance Ground Proximity Warning System
FAA	:	Flight Federation Administration of United States of America
GPS	:	Global Positioning System
kg	:	kilogram
KNKT	:	*Komite Nasional Keselamatan Transportasi* (Indonesia Aircraft Accident Investigation Authorithy)
lbs	:	Pound or pound-mass
MFD	:	Multi-Function Display
OM	:	Operation Manual
PF	:	Pilot Flying
PIC	:	Pilot in Command
PM	:	Pilot Monitoring
POH	:	Pilot Operating Handbook
SD	:	Secure Digital
SIC	:	Second in Command
SOP	:	Standard Operating Procedure
STC	:	Supplemental Type Certificates
STOL	:	Short Takeoff and Landing
TC	:	Type Certificate
TDZ	:	Touchdown Zone
TO	:	Takeoff
TOD	:	Top of Descend
USA	:	United States of America

SYNOPSIS

On 21 January 2020, a Cessna 208B EX aircraft registered PK-SNP was being operated by PT. Smart Cakrawala Aviation as unscheduled passenger and cargo flight from Mozes Kilangin International Airport (WABP), Timika, Papua to Kenyam Airstrip (WAYC), Kenyam, Papua. On board the aircraft was two pilots and 12 passengers. The Pilot in Command (PIC) acted as Pilot Monitoring (PM) while the Second in Command (SIC) acted as Pilot Flying (PF).

At 0248 UTC (1148 LT), on daylight condition, the aircraft departed from Timika. Prior to the departure, there was no record or report of aircraft system malfunction.

At 12:25:02 LT, the Cockpit Voice and Data Recorder (CVDR) recorded the PM broadcasted to the frequency of Traffic Information Broadcast by Aircraft (TIBA) that the aircraft was joining the left downwind runway 22. The airspace over Kenyam was classified as class G airspace and no air traffic services provided.

At 12:25:58 LT, the CVDR recorded that when the aircraft on final runway 22, the PM advised the PF to set the aircraft's speed at range of 70 up to 84 knots followed by instruction to pitch down the aircraft. About one second later, stall warning of the aircraft was active for two seconds followed by Enhance Ground Proximity Warning System (EGPWS) callout "MINIMUM MINIMUM".

At 12:26:19 LT, the CVDR recorded that the PM reminded the PF to pitch down and to reduce the engine power to idle.

At 12:26:23 LT, the CVDR recorded that PM advised the PF to not hesitate to idle the engine power. One second later, the stall warning was active again for one second. The PM pitched up the aircraft and at 12:26:25 LT, the CVDR recorded sound of touchdown. The aircraft touched down about 150 meters before beginning runway 22. The PM felt that the tail section of the aircraft impacted with ground followed by the main landing gears.

The aircraft bounced to the right and touched down outside runway pavement with the right landing gear first, the PM recovered the aircraft to the runway centerline. After the aircraft returned to runway centerline, the PM advised the PF "I have control" and continued taxi to the apron.

No one injured in this occurrence.

Following this occurrence, the Smart Aviation has taken safety actions. The KNKT acknowledges the safety actions taken by Smart Aviation and considered that the safety actions were relevant to improve safety, however there still safety issues remain to be considered. Therefore, the KNKT issued safety recommendations to the aircraft operator to address safety issues identified in this report.

The investigation is continuing, should any further relevant safety issues emerge during the course of the investigation, KNKT will immediately bring the issues to the attention of the relevant parties and publish as required.

1 FACTUAL INFORMATION

1.1 History of the Flight

On 21 January 2020, a Cessna 208B EX aircraft registered PK-SNP was being operated by PT. Smart Cakrawala Aviation as unscheduled passenger and cargo flight from Mozes Kilangin International Airport (WABP), Timika[1], Papua to Kenyam Airstrip (WAYC), Kenyam[2], Papua. On board the aircraft was two pilots and 12 passengers. The Pilot in Command (PIC) acted as Pilot Monitoring (PM), while the Second in Command (SIC) acted as Pilot Flying (PF).

At 0248 UTC (1148 LT[3]), on daylight condition, the aircraft departed from Timika. Prior to the departure, there was no record or report of aircraft system malfunction. The aircraft was planned to climb to cruising altitude of 9,000 feet, however due to traffic, the pilot changed the cruising altitude to 7,000 feet.

At 12:25:02 LT, the Cockpit Voice and Data Recorder (CVDR) installed in the aircraft recorded the PM broadcasted to the frequency of Traffic Information Broadcast by Aircraft (TIBA) that the aircraft joined left downwind runway 22. The airspace over Kenyam was classified as class G airspace, and there were no air traffic services provided.

At 12:25:58 LT, the CVDR recorded that when the aircraft on final runway 22, the PM advised the PF to set the aircraft's speed at range of 70 up to 84 knots followed by instruction to pitch down the aircraft. About one second later, stall warning of the aircraft was active for two seconds, followed by Enhance Ground Proximity Warning System (EGPWS) callout "MINIMUM MINIMUM".

At 12:26:19 LT, the CVDR recorded that the PM reminded the PF to pitch down and to reduce the engine power to idle.

At 12:26:23 LT, the CVDR recorded that PM advised the PF to do not hesitate to idle the engine power. One second later, the stall warning was active again for one second. The PM pitched up the aircraft, and at 12:26:25 LT, the CVDR recorded the sound of touchdown. The aircraft touched down about 150 meters before beginning runway 22. The PM felt that the tail section of the aircraft impacted with the ground, followed by the main landing gears.

The aircraft bounced to the right and touched down outside runway pavement with the right landing gear first, and the PM recovered the aircraft to the runway centerline. After the aircraft returned to the runway centerline, the PM advised the PF "I have control" and the taxi to the apron.

No one injured in this occurrence.

1 Mozes Kilangin International Airport (WABP), Timika, Papua will be named as Timika for the purpose of this report.

2 Kenyam Airstrip (WAYC), Kenyam, apua will be named as Timika for the purpose of this report.

3 The 24-hours clock in Local Time (LT) is used in this report. Local time is Universal Time Coordinated (UTC) +9 hours.

1.2 Damage to Aircraft

The aircraft had minor damaged with the details as follows:

- left and right main landing gear struts were bent;
- left and right main wheel sidewall crack;
- cargo pod compartment C and D were damaged;
- tail cone bottom skin rivet was damaged;
- rear tail cone bottom bulkhead was damaged; and
- bottom panel center spring deformed.

Figure 1: The bent of the right main landing gear strut

1.3 Personnel Information

1.3.1 Pilot in Command

The Pilot in Command (PIC) is 37 years old, from Indonesia, who had valid Commercial Pilot License (CPL) with qualification as Single Engine Land aircraft pilot, included Cessna 208B aircraft. The PIC had valid first-class medical certificate without any limitation. The last proficiency check for the pilot was conducted on 21 March 2019 while the last line check was conducted on 27 April 2019.

The PIC had accumulated total flying hours of 3,317 hours, including 2,780 hours on Cessna 208B. In the last 24 hours, the PIC had flown for 3.8 hours and for the occurrence flight had flown for 41 minutes.

1.3.2 Second in Command

The Second in Command (SIC) is 27 years old, from Indonesia, who had valid Commercial Pilot License (CPL) with qualification as Single Engine Land aircraft pilot, included Cessna 208B aircraft. The PIC had valid first-class medical certificate with limitation to wear corrective lenses. The last proficiency check for the pilot was conducted on 14 June 2019, while the last line check was conducted on 18 January 2019.

The SIC had accumulated total flying hours of 787 hours, including 597 hours on Cessna 208B. In the last 24 hours, the SIC had flown for 3.8 hours and the occurrence flight had flown for 41 minutes.

1.4 Aircraft Information

1.4.1 General

The Cessna 208B EX registered PK-SNP was manufactured by Textron Aviation Inc. in 2018 with serial number of 208B5495. The aircraft had valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R). The total time since new of the aircraft was 997 hours and 37 minutes and the total cycle since new was 1,334 cycles.

1.4.2 Payload Extender

During the occurrence, the aircraft operator had installed the PK-SNP aircraft with Aircraft Payload Extender (APE) II, III, and Short Takeoff and Landing (STOL) system developed by AeroAcoustics Aircraft System Inc. in the United States of America (USA). The following description of the APE system was taken from the official website of the AeroAcoustics Aircraft System Inc[4].

The APE II is a small aerodynamic device consisting of two 16-inch-long stall fences/strakes attached to the wing leading edge, just outboard of the landing light. The device could increase Maximum Takeoff Weight from 8,807 to 9,062 lbs. This APE II is approved by Flight Federation Administration of USA (FAA) with Supplemental Type Certificates (STC)[5] number SA00392SE.

The APE III modification primarily consists of replacing the existing, life-limited, main landing gear axle with an improved, high cycle axle. The modification could increase Maximum Landing Weight from 8,500 to 9,000 lbs. This APE III is approved by FAA with STC number SA01213SE.

The APE STOL is a unique aerodynamic device attached to the trailing edge flaps, which can reduce takeoff and landing field length performance up to 20%. The APE STOL is approved by FAA with STC number SA01805SE.

4 Accessed on 4 March 2020, the detail explanation of APE system can be found in the following link: http://aeroacoustics.com/files/208bproducts.htm

5 STC is a Type Certificate (TC) issued when an applicant has received FAA approval to modify an aeronautical product from its original design.

1.4.3 Global Positioning System

The aircraft was equipped with Garmin G1000 Global Positioning System (GPS), which has capability of flight data logging. According to the Garmin G1000 Integrated Flight Deck Pilot's Guide, the data logging capability would automatically store critical flight and engine data on a Secure Digital (SD) data card inserted into the top card slot of the Multi-Function Display (MFD). The data logging is recorded on the SD data card every second when the MFD is powered ON.

The logging data is capable to record 64 parameters including time, coordinate, GPS altitude, indicated airspeed, vertical speed, ground speed, pitch attitude angle, and roll attitude angle. All of these recorded parameters could be downloaded.
After the occurrence, the data of the SD data card installed on the Garmin G1000 was successfully retrieved. The data consisted of 35 recorded files from 16 to 21 January 2020 included the accident flight, which contained 43 minutes 30 seconds of aircraft movement.

1.4.4 Flight Following System

The aircraft operator utilizes flight following system provided by Spider Tracks Limited with type/model Spider 7, which manufactured in New Zealand. The tracking and flight data from the aircraft transmitted to the Spidertracks website and monitored by Smart Aviation staff in Jakarta.

The aircraft operator subscribed the Spidertracks flight following system for 2 minutes interval data reporting for each fleet, including the PK-SNP aircraft. The reporting parameters in the tracking system contained several data, including time, coordinate, aircraft altitude, speed, and bearing. The tracking system begins to send position report when the device is powered in open area.

The aircraft operator provided the downloaded Spidertracks data of the occurrence flight, which contained 43 minutes 36 seconds of reporting data record.

1.4.5 Weight and Balance

On 20 April 2019, the aircraft weight and balance document was issued and the aircraft empty weight was 5,202.95 lbs, without the cargo pod. During the occurrence, the cargo pod was installed on the aircraft.

The weight and balance form of the occurrence flight provided by the Smart Aviation contained the relevant information as follows:

aircraft empty weight	:	5,336.4 lbs
usable fuel	:	750 lbs
total pilot weight	:	150 kg (330 lbs)
total passenger weight	:	673 kg (1,810.6 lbs)
total cargo weight	:	517 kg (1,137.4 lbs)
fuel burn for taxi, start-up	:	35 lbs
fuel burn for enroute	:	120 lbs

The aircraft operator described that the aircraft empty weight on the occurrence flight weight and balance form used default empty weight on their application of weight and balance calculation. The weight of the pilot, passenger, and cargo in the form was stated in kg unit while the other used lbs. The aircraft operator used weight conversion of 1 kg = 2.2 lbs.

The fuel burn for taxi and start-up was determined using average estimation on all airport while the fuel burn for enroute was using estimation based on the flight plan.

Based on the data above, the aircraft operator determined the following weight:

ramp weight[6]	:	9,034.4 lbs (maximum 9,097 lbs)
takeoff weight[7]	:	8,999.4 lbs (maximum 9,062 lbs)
landing weight[8]	:	8,879.4 lbs (maximum 9,000 lbs)

According to the weight and balance form of the occurrence compared with the weight limitation after installation of APEs system (see subchapter 1.4.6), the aircraft was operated within the weight and balance limitation.

After the installation of APEs system, the aircraft operator had not been amended the weight and balance document of the PK-SNP aircraft.

After the aircraft had been repaired, the aircraft operator recalculated the aircraft weight to include the installation of APEs system. No additional installation on the aircraft prior and after the occurrence, except the replacement of the damaged components. On 18 February 2020, the weight and balance document was issued, including the cargo pod installed, and the result of the aircraft empty weight was 5,401.30 lbs.

1.4.6 Aircraft Weight Limits

The aircraft operator utilized Pilot's Operating Handbook (POH) and FAA Approved Airplane Flight Manual (AFM) for the Cessna 208B with serial number 208B5000 and on, as guidance to utilize the PK-SNP aircraft. The document described the weight limits prior to the installation of APE as follows:

maximum ramp weight	:	8,842 lbs or 4,010.6 kg
maximum takeoff weight	:	8,807 lbs or 3,994.7 kg
maximum landing weight	:	8,500 lbs or 3,855.5 kg

The weight limits above had been revised as result of installation of APE, and described in the POH and FAA Approved Flight Manual Supplement (AFMS) for the Cessna 208B EX with serial number 208B5495 (PK-SNP) as follows:

maximum ramp weight	:	9,097 lbs
maximum takeoff weight	:	9,062 lbs
maximum landing weight	:	9,000 lbs

6 Ramp weight is weight during ground maneuver. Consisting aircraft empty weight, usable fuel, total occupants and cargo on board weight.

7 Takeoff weight is weight during the start of the takeoff roll. Calculating from ramp weight minus the fuel burned for taxi and start-up engine.

8 Landing weight is weight during touchdown. Calculating from takeoff weight minus the fuel burned for enroute.

1.5 Meteorological Information

There was no meteorological information provider in the Kenyam Airstrip. The pilot recalled that the weather over Kenyam Airstrip was clear, the visibility was good and based on the aircraft GPS, the wind velocity during landing was reported about 5 up to 7 knots.

1.6 Aerodrome Information

The investigation is unable to find the Kenyam Airstrip information in the Indonesia Aeronautical Information Publication (AIP). Based on the wikimapia.org, Kenyam Airstrip is located on coordinate 4°35'58"S; 138°23'3"E.

The runway surface was asphalt without any marking. There were no air traffic services provided and the airspace over the airstrip was class G airspace.

The Operation Manual Part B (OM-Part B) of the Smart Aviation contained information of the Kenyam Airstrip as follows:

Touch down elevation	:	400 feet
Runway direction	:	04 – 22
Runway length	:	604 meters

1.7 Flight Recorders

The aircraft was fitted with a FA2100 Cockpit Voice and Data Recorder (CVDR) manufactured by L3Harris Technologies with part number 2100-3083-51 and serial number 1205457. The CVDR has capability to record up to 2 hours high quality recording on four channels and minimum of 25 hours of flight data. The CVDR was transported to the KNKT recorder facility for data downloading.

The CVDR recorded 2 hours of audio record on four channels with hearable quality. The CVDR also contained flight data of 169 parameters with approximately 263 hours of aircraft operation, which contained 333 flights included the occurrence flight.

1.8 Wreckage and Impact Information

The aircraft touched down outside the runway pavement, about 150 meters before beginning runway 22.

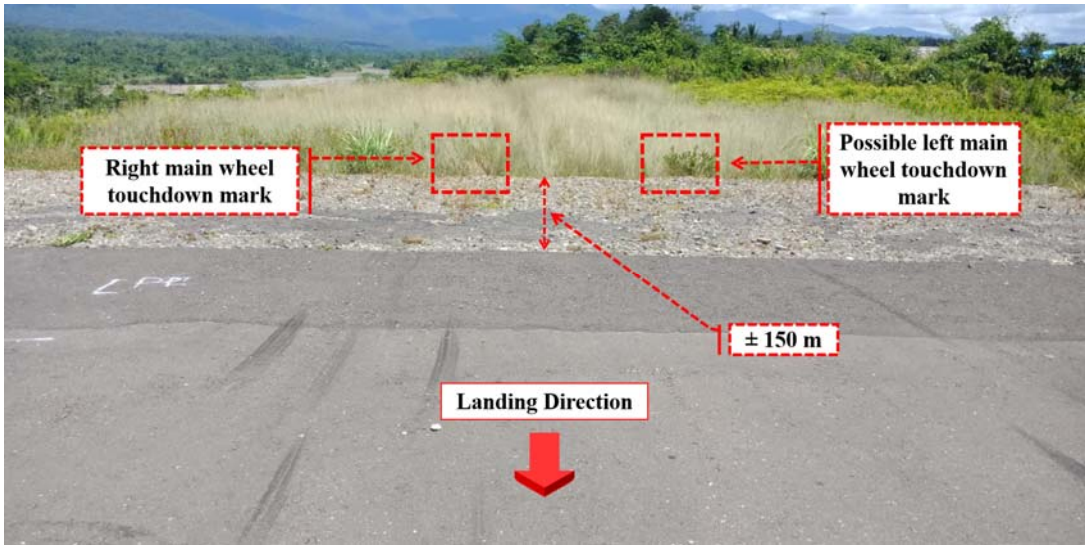


Figure 2: The touchdown location

1.9 Test and Research

After the occurrence, the investigation conducted recalculation of the weight and balance used the data provided in the weight and balance form of the occurrence flight. The investigation used the aircraft empty weight of 5,401.3 lbs, considering the aircraft had been installed with APEs system and cargo pod.

The POH and AFM subchapter 1.4.6 described the maximum ramp weight of 8,842 lbs was converted to 4,010.6 kg which equal to 1 kg = 2.2046 lbs.

The total weight of pilot, passenger and cargo used conversion of 1 kg = 2.2046 lbs was heavier 6.2 lbs than the conversion of 1 kg = 2.2 lbs.

The calculation result was as follows:

ramp weight	:	9,106 lbs (maximum 9,097 lbs)
takeoff weight	:	9,071 lbs (maximum 9,062 lbs)
landing weight	:	8,951 lbs (maximum 9,000 lbs)

1.10 Organizational and Management Information

1.10.1 Aircraft Operator

The aircraft was operated by PT. Smart Cakrawala Aviation (Smart Aviation) which had valid Air Operator Certificate (AOC) number 135-062. The Smart Aviation is authorized to conduct air transportation carrying passengers and cargo in scheduled and non-scheduled operation within and outside Indonesia for aircraft operations under Civil Aviation Safety Regulation (CASR) Part 135.

The Smart Aviation developed Operation Manuals (OM)s which contains policy and procedure approved by the Directorate General of Civil Aviation.

1.10.1.1 Weight and Balance Calculation

The Operation Manual Part A (OM-Part A) subchapter 8.10.2 described the procedure regarding weight and balance as follows:

8.10.2. General

a. *The PIC shall ensure that during any phase of operation, the loading, weight and Centre of gravity of the Aircraft complies with the limitations specified in the approved Pilots Operation Handbook.*
b. *The weight and the centre of gravity of any aircraft must be established by actual weighing prior to initial entry into service and thereafter at intervals of not more than 3 years. The accumulated effects of modifications and repairs on the weight and balance must be accounted for and properly documented. Furthermore, Aircraft must be reweighed if the effect of modifications on the weight and balance is not accurately known.*
c. *The weight of all operating items and Flight crews included in the aircraft basic operating empty weight must be determined by using actual weight. The influence of their position on the aircraft centre of gravity must be determined.*
d. *The weight of the traffic load, must be established by actual weighing.*

The Operation Manual Part B (OM-Part B) subchapter 1.8.4 described the conversion unit measurement that used in the company as follows:

Converting	***To***	***Multiply by***
Kilograms	*Pounds*	*2.204622*
Pounds	*Kilograms*	*0.453592*

1.10.1.2 Task Sharing on Dual Pilot Operation

The OM-Part A described the task sharing as follows:

10.2.7. Task Sharing

The PF shall focus his attention primarily on the control of the aircraft. Whenever other activities or special events may prevent the PF from fulfilling this task, he shall hand over to the PM with the call-out "You have control". The PM shall confirm takeover with the reply "I have control".

The PM shall assist the PF, by e.g.:

a. *Supervising the PF;*
b. *Performing Radio Telephony and other related tasks as described by the particular SOP.*

During manual flight, all inputs to the auto flight control units shall be performed by the PM, on command of the PF. During auto flight, all inputs to the auto flight control units shall be performed by the PF.

Note: For specific aircraft type task sharing, refer to particular aircraft type SOP.

1.10.1.3 Approach Procedure to Kenyam

The approach procedure to Kenyam is described in the Operation Manual Part C (OM-Part C) as follows:

Approach Procedure

1. *Begin descent as per appropriate TOD from 7,500 ft*
2. *Over view the field:*
   - *Make a wide east downwind if landing runway 22*
   - *Speed – 100 kts or below*
   - *Propeller – MAX (FULL FORWARD)*
   - *FLAPS – 20° (TO/APP)*
   - *All checks completed*
3. *Abeam TDZ*
   - *FLAPS – FULL*
   - *Vref – as appropriate depending on the LDW, consider the short and gravel (unimproved)strip*
   - *KP at 1 nm final at 800 ft*

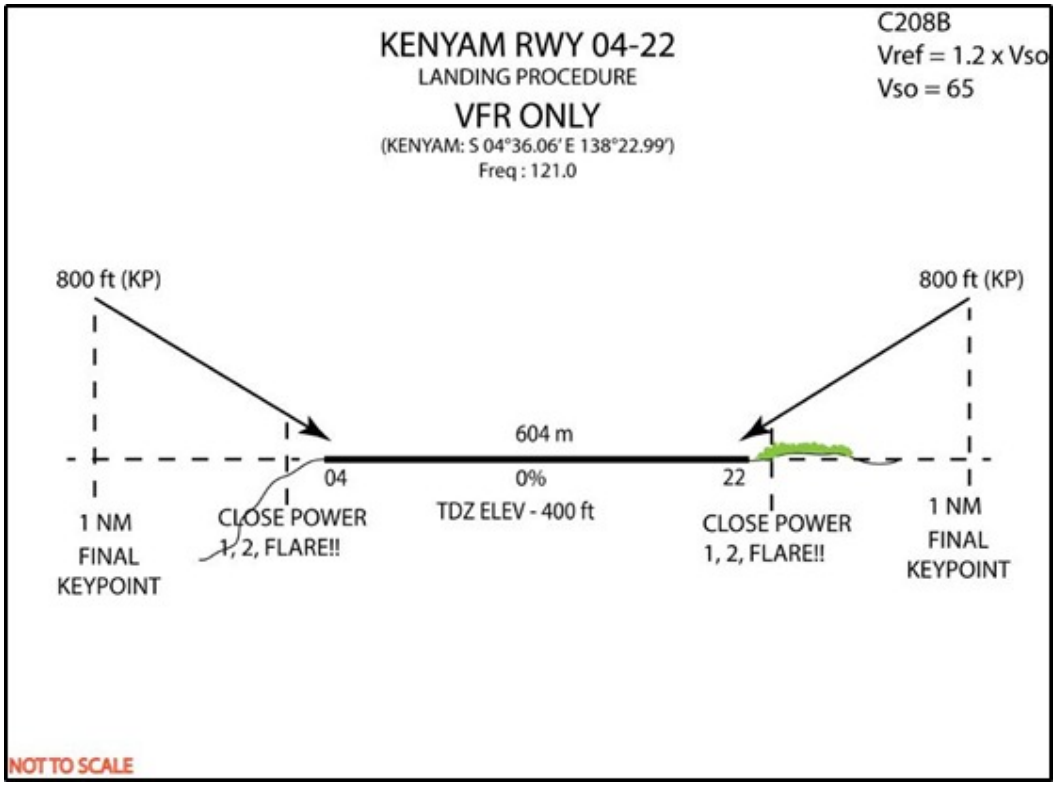


Figure 3: Kenyam landing procedure based on OM-Part B

1.11 Additional Information

The investigation is continuing, should any further relevant safety issues emerge during the course of the investigation, KNKT will immediately bring the issues to the attention of the relevant parties and publish as required.

1.12 Useful or Effective Investigation Techniques

The investigation was conducted in accordance with the KNKT approved policies and procedures, and in accordance with the standards and recommended practices of Annex 13 to the Chicago Convention.

2 FINDINGS

Findings are statements of all significant conditions, events or circumstances in the accident sequence. The findings are significant steps in the accident sequence, but they are not always causal, or indicate deficiencies. Some findings point out the conditions that pre-existed the accident sequence, but they are usually essential to the understanding of the occurrence, usually in chronological order.

According to factual information during the investigation, the KNKT identified initial findings as follows:

1. The aircraft had valid Certificate of Airworthiness (C of A) and Certificate of Registration (C of R). Prior to the departure, there was no record or report of aircraft system malfunction.
2. The aircraft had been installed Aircraft Payload Extender (APE) II, III, and Short Takeoff and Landing (STOL) system which increased takeoff and landing weight limitations, and reduced takeoff and landing field length performance.
3. After the installation of APEs system, the aircraft operator had not amended the weight and balance document of the PK-SNP aircraft. During the occurrence, the weight and balance calculation used the default empty weight on the aircraft operator application and the aircraft empty weight was not considering the additional weight of the APEs system installation.
4. The weight and balance form of the occurrence flight used different weight unit, the occupants and cargo weight used kg while the fuel and aircraft weight used lbs. The difference weight unit might trigger error to the user.
5. The OM-Part B stated the conversion of 1kg = 2.204622 lbs, while the Pilot's Operating Handbook (POH) and FAA Approved Airplane Flight Manual (AFM) for the Cessna 208B was 1 kg = 2. 2.2046 lbs. The aircraft operator converted the weight using 1kg = 2.2 lbs, resulted in lighter weight calculation.
6. The investigation conducted recalculation of the weight and balance used the data provided in the weight and balance form of the occurrence flight. The recalculation result of weight balance used the conversion of 1 kg = 2.2046 lbs, and the aircraft empty weight included the cargo pod and the APEs system installed resulted in the ramp and takeoff weights exceeded the limitation.
7. The pilots had valid commercial pilot licenses which qualified as single engine land pilot and valid first-class medical certificates.
8. When the aircraft on final runway 22, the Pilot Monitoring (PM) advised the PF to set the aircraft's speed at range of 70 up to 84 knots followed by instruction to pitch down the aircraft. About one second later, stall warning of the aircraft was active for two seconds followed by Enhance Ground Proximity Warning System (EGPWS) callout "MINIMUM MINIMUM".
9. After EGPWS callout "MINIMUM MINIMUM" the PM reminded the PF to pitch down and to reduce the engine power to idle. A few second later, the PM advised the PF to not hesitate to idle the engine power.

10. Prior to touchdown, the stall warning was active again for one second. The PM pitched up the aircraft and the aircraft touched down.
11. The aircraft touched down about 150 meters before beginning runway 22. The PM felt that the tail section of the aircraft impacted with ground followed by the main landing gears.

3 SAFETY ACTION

On 17 February 2020, the Smart Aviation issued Safety & Quality Notice to remind pilot of the following issues:

- differences in aircraft limitation among Cessna 208, Cessna 208B and Cessna C208B (EX).
- pilot's workload distribution during dual pilot operation.

The detail Safety and Quality Notice can be found in the appendix 5.1 and 5.2.

4 SAFETY RECOMMENDATIONS

The KNKT acknowledges the safety actions taken by Smart Aviation and considered that the safety actions were relevant to improve safety, however there still safety issues remain to be considered. Therefore, the KNKT issued safety recommendations to address safety issues identified in this report.

4.1 Smart Aviation

- **04.O-2019-02.1**

  The weight and balance form of the occurrence flight described the aircraft empty weight was not considered the additional weight of the APEs system instalation.

  The OM-Part B stated the conversion of 1kg = 2.204622 lbs, while the Pilot's Operating Handbook (POH) and FAA Approved Airplane Flight Manual (AFM) for the Cessna 208B was 1 kg = 2. 2.2046 lbs. The aircraft operator converted the weight using 1kg = 2.2 lbs, resulted in lighter weight calculation.

  The investigation conducted recalculation of the weight and balance used the data provided in the weight and balance form of the occurrence flight. The investigation used the aircraft empty weight of 5,401.3 lbs, considering the aircraft had been installed with APE system and cargo pod.

  The recalculation result of weight balance used the conversion of 1 kg=2.2046 lbs and the aircraft empty weight included the cargo pod and the APEs system installed resulted in the ramp and takeoff weights exceeded the limitation.

  Therefore, the KNKT recommends to review the calculation of weight and balance ensuring the calculation is conducted appropriately includes the right aircraft empty weight and the conversion value.

- **04.O-2019-02.2**

  The weight and balance form of the occurrence flight used different weight unit, the occupants and cargo weight used kg while the fuel and aircraft weight used lbs. The difference weight unit might trigger error to the user.

  Therefore, the KNKT recommends to review the weight and balance form ensuring the calculation is used the same weight unit.

5 APPENDICES

5.1 Safety & Quality Notice Number SFD/II/2020/001

SMART AVIATION

smartaviation

SAFETY & QUALITY NOTICE

No	:	SFD/II/2020/002
Attention	:	Operation Department
Date	:	February, 17th2020
CC	:	President Director Director Operation Manager Chief Pilot Fixed Wing
Subject	:	***Aircraft Limitation and Character Differences***

BACKGROUND

Aircraft Differences Cessna C208/C208B/C208B(EX)

NOTICE

Reference : Pilot Operating HandBook C208/C208B/C208B(EX)

Follow Actions :

1. Pilot needs to fully understand and keep in mind for aircraft limitation and character differences

2. Must Comply with :

   POH C208
   Section 2 – Operating Limitation

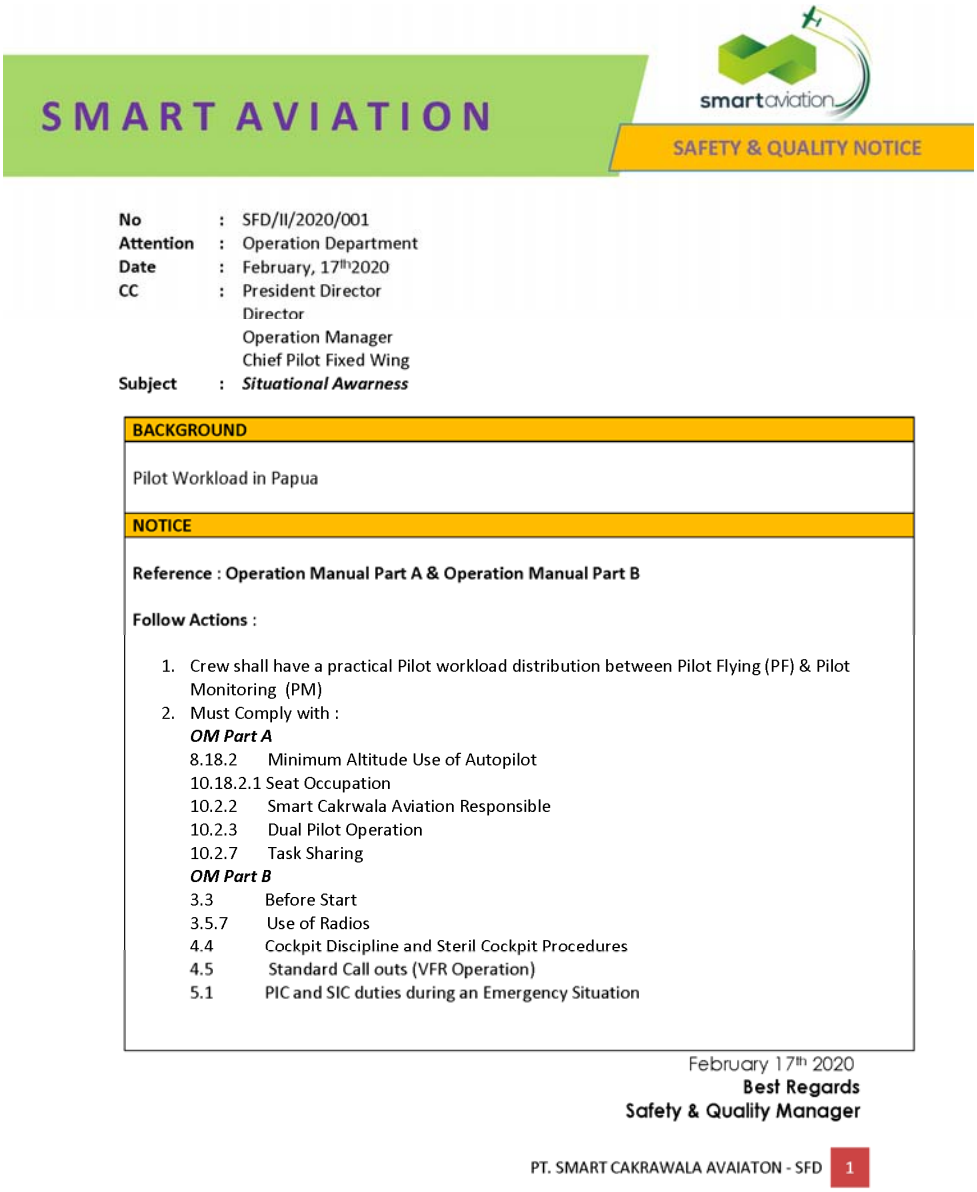
   POH C208B
   Section 2 – Limitations

   POH C208B(EX)
   Section 2 – Operating Limitations

February 17th 2020
Best Regards
Safety & Quality Manager

PT. SMART CAKRAWALA AVAIATON - SFD 1

5.2 Safety & Quality Notice Number SFD/II/2020/002



SMART AVIATION

smartaviation

SAFETY & QUALITY NOTICE

No : SFD/II/2020/001
Attention : Operation Department
Date : February, 17th2020
CC : President Director
Director
Operation Manager
Chief Pilot Fixed Wing
Subject : ***Situational Awarness***

BACKGROUND

Pilot Workload in Papua

NOTICE

Reference : Operation Manual Part A & Operation Manual Part B

Follow Actions :

1. Crew shall have a practical Pilot workload distribution between Pilot Flying (PF) & Pilot Monitoring (PM)
2. Must Comply with :
   OM Part A
   8.18.2 Minimum Altitude Use of Autopilot
   10.18.2.1 Seat Occupation
   10.2.2 Smart Cakrwala Aviation Responsible
   10.2.3 Dual Pilot Operation
   10.2.7 Task Sharing
   OM Part B
   3.3 Before Start
   3.5.7 Use of Radios
   4.4 Cockpit Discipline and Steril Cockpit Procedures
   4.5 Standard Call outs (VFR Operation)
   5.1 PIC and SIC duties during an Emergency Situation

February 17th 2020
Best Regards
Safety & Quality Manager

PT. SMART CAKRAWALA AVAIATON - SFD 1

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