CORONERS COURT OF QUEENSLAND

FINDINGS OF INQUEST

CITATION:	**Inquest into the death of Kerri Anne Pike, Peter Michael Dawson and Tobias John Turner**
TITLE OF COURT:	Coroners Court of Queensland
JURISDICTION:	CAIRNS
FILE NO(s):	2017/4584, 2017/4582 & 2017/4583
DELIVERED ON:	30 August 2019
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FINDINGS OF:	Nerida Wilson, Northern Coroner
CATCHWORDS:	Coroners: inquest, skydiving multiple fatality; Australian Parachute Federation; Commonwealth Aviation Safety Authority; Skydive Australia; Skydive Cairns; solo sports jump; tandem; relative work; back to earth orientation; premature deployment of main chute; container incompatibility with pack volume; reserve chute; automatic activation device (AAD); consent for relative work; regulations; safety management system; drop zone; standardised checking

of sports equipment; recommendation for sports jumpers to provide certification for new or altered sports rigs including compatibility of main chute to container; recommendation to introduce 6 month checks by DZSO or Chief Instructor for sports rigs at drop zones to ensure compatibility.

REPRESENTATION:

Counsel Assisting:	Ms Melinda Zerner i/b Ms Melia Benn
Family of Kerri Pike:	Ms Rachelle Logan i/b Ms Klaire Coles, Caxton Legal Centre Inc
Family of Tobias Turner:	Dr John Turner and Mrs Dianne Turner
Skydive Cairns:	Mr Ralph Devlin QC and Mr Robert Laidley i/b Ms Laura Wilke, Moray and Agnew Lawyers
Civil Aviation Safety Authority:	Mr Anthony Carter, Special Counsel
Australian Parachuting Federation:	Mr Peter Roney QC i/b Ms Laura Gallagher, Landers and Rogers

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PUBLICATION

Section 45 of the *Coroners Act 2003* ('the Act') provides that when an inquest is held, the coroner's written findings must be given to the family of the person in relation to whom the inquest has been held, each of the persons or organisations granted leave to appear at the inquest, and to officials with responsibility over any areas the subject of recommendations. These are my findings 103 page in relation to the deaths of Kerri Anne Pike, Peter Michael Dawson and Tobias John Tuner. They will be distributed in accordance with the requirements of the Act and posted on the website of the Coroners Court of Queensland.

INTRODUCTION

1. The inquest into the multiple fatalities of Kerri Anne Pike ('Kerri'), Peter Michael Dawson ('Peter') and Tobias John Turner ('Toby') was conducted over five (5) days from 26 November 2018 to 30 November 2018 in the Coroners Court of Queensland at Cairns.

2. Kerri, Peter and Toby died during a high speed free fall mid-air accident whilst skydiving at Mission Beach, Far North Queensland, on Friday 13 October 2017 during a commercial operation conducted by Skydive Australia.

3. At the time of their deaths, all three were residing in Mission Beach. The Pike family in particular had strong and long held connections to the local area. Kerri, Peter and Toby were well known in the district. The deaths shocked the community of Mission Beach and beyond.

4. Kerri, Peter and Toby were much loved members of their respective close knit families and the local community. Kerri and Peter were friends. Peter and Toby were friends and colleagues (at Skydive Mission Beach).

5. Kerri is the mother of eight children. Her husband, Alister was on the beach to watch Kerri's tandem skydive, a gift he had purchased for her 54th birthday. He was watching from the beach with one of their eight children.

6. At inquest, Kerri's interests were represented by the Caxton Legal Centre Inc, *pro-bono* via the auspices of the Coronial Assistance Legal Service.

7. The family of Peter Dawson attended every day of the inquest, although played

no active role in the proceedings.

8. Toby's parents, Dr John and Mrs Diane Turner (a solicitor), were granted leave to appear and they ably represented Toby's interests.

Relevant Legislation

9. Pursuant to s45(5) of the Act a coroner must not include in the findings any statement that a person is, or may be:

   a) guilty of an offence; or
   b) civilly liable for something.

10. The focus of an inquest is to discover what happened, not to ascribe guilt or attribute blame or apportion liability. The purpose is to inform the family and the public of how the death occurred with a view to reducing the likelihood of similar deaths in future.

Comments and recommendations

11. Pursuant to the Act: A coroner may, whenever appropriate, comment on anything connected with a death investigated at an inquest that relates to:

    46 (1)(a) "public health or safety" and
    46(1)(c) "ways to prevent deaths from happening in similar circumstances in the future."

Summary of primary findings

12. For the reasons set out below, I **find** that Kerri, Peter and Toby all died instantly as a result of their fatal injuries sustained in a mid-air collision whilst skydiving.

13. Toby was undertaking a solo sports jump in conjunction with tandem jumpers Peter and Kerri.

14. I **find** that the collision was accidental and occurred when the solo sports jumpers' main parachute deployed prematurely beneath the tandem pair who were then in a drogue fall, causing the tandem pair to fall through the parachute colliding with the solo sports jumper, all sustaining non-survivable injuries mid-air as a result of the collision.

The evidence relied upon

15. The coronial investigation brief tendered at inquest comprised voluminous material. Seventeen witnesses were identified and called to give oral evidence

at inquest. Three witnesses sought to object to answer questions on the grounds of self-incrimination. Pursuant to section 39 *Coroners Act* 2003 I was satisfied that it was in the public interest to require Brandon Van Niekerk, Steven Charles Edward Lewis and Thomas Gilmartin to give evidence that would tend to incriminate them.

16. In the formulation of these findings, I have distilled and referred only to that evidence and material relevant to the basis for my findings and recommendations. I do not refer to all of the material, evidence or submissions. In relation to a number of significant matters there appeared to be common ground; save for the Turner family who diverge in their assessment of the evidence regarding the deployment of Toby's parachute. I will refer to those matters below.

17. I have had the benefit of and regard to the comprehensive submissions of Counsel Assisting the inquest, Ms Melinda Zerner, and in the main I have incorporated and adopted those submissions. I note that legal representatives also acknowledged the written submissions provided by Ms Zerner. I have also had regard to the very helpful submissions of all those with leave to appear including:

- The Pike family;
- The Turner family;
- The Australian Parachuting Federation (APF);
- Skydive Australia; and
- The Civil Aviation Safety Authority (CASA)

18. The Queensland Police Service ('QPS') investigated the accident in consultation with the Australian Parachuting Federation ('APF'). Both completed comprehensive investigation reports. Witnesses from each agency were called to provide oral evidence at the inquest.

19. Mr Tony Rapson from the United Kingdom Civil Aviation Authority ('CAA') was retained to provide a critique of the APF investigation report. He gave evidence at inquest.

20. I have identified a number of recommendations.

Circumstances leading up to death

21. On Friday 13 October 2017, Kerri Anne Pike ('Kerri'), Peter Michael Dawson ('Peter') and Tobias John Turner ('Toby') died as a result of fatal injuries whilst skydiving at Mission Beach Queensland ('the accident').

22. Skydive Cairns[1] (an outlet of Skydive Australia Pty Ltd and owned and operated by Experience Co Limited) facilitated the jumps out of Mission Beach.[2]

23. Kerri Pike was undergoing a tandem jump as a fee paying student / customer. [I use the terminology student and customer because in fact Kerri was both as a student when performing her tandem dive however she was a fee paying customer within the context of a commercial operation. Both terms are used interchangeably by me in these findings.] Kerri's husband, Alister gifted her a voucher for her 54th birthday.[3] Her tandem instructor was Peter Dawson, a Tandem Master Skydiver contracted to Skydive Australia.[4] As was usual practice, Kerri Pike was strapped to the front of Peter Dawson for the jump.[5]

24. Toby Turner was a contracted skydiver of Skydive Australia and was jumping at the same time as Peter and Kerri. The Queensland Police described Kerri Pike and Peter Dawson as having "*a strong friendship and because of this had planned to conduct the skydive together*".[6] This was confirmed during oral evidence at the inquest.

25. The conditions at the time of the jumps were favourable with an 8 to 10 knot, north-east wind.[7]

26. Following the jumps, Toby Turner was located at 134 Alexander Avenue. Mission Beach and was pronounced deceased by Queensland Ambulance Service ('QAS') paramedic Adrian House at 3.21pm.[8] Peter Dawson and Kerri Pike were located at 138 Alexander Avenue, Mission Beach and were pronounced deceased by QAS paramedic Adrian House at 3.40pm and 3.35pm

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[1] APF Admin code for Skydive Cairns is SDCNS as per ExC4, p4
[2] http://www.skydive.com.au
[3] Ex B1.3, pp 1 and 2
[4] Ex B1.3, p1
[5] Ex B1.1 p2
[6] Ex B1.3, p2
[7] Ex B1.1, p3
[8] Ex B1.3, p2

respectively.[9] The location of the deceased persons was approximately 1.5 kilometers northwest of the intended Drop Zone at Donkin Lane, Mission Beach.[10]

THE INVESTIGATION

The Police Investigation

27. The QPS were advised of the fatalities. The investigating officer was Sergeant Troy Nowitzki.

28. The last person to see the deceased persons alive was Mark Whaley.[11] He was the pilot of the plane, from which Kerri, Peter and Toby jumped.[12]

29. Mr Richard McCooey of the Australian Parachuting Federation ('APF') was notified of the accident.[13]

30. Mr Stephen Lewis, Skydive Cairns, Chief Instructor was on a rest day when the accident occurred. He attended to assist investigators.[14] Mr Stephen O'Malley was the Chief Executive Officer and Area Manager of the Far Northern Queensland based operation for Skydive Australia. He also attended the scene to assist the investigation.[15]

31. Sergeant Nowitzki's investigation concluded there had been a mid-air collision:

> "*somewhere between leaving the plane door and approx. 4000 feet DAWSON and PIKE have collided with TURNER in mid-air during a free or semi-free fall. It is still unclear without viewing DAWSON'S Go-Pro footage exactly what occurred but it is assumed through primary investigations of the deceased's injuries and their parachutes that TURNER'S parachute may have opened early causing him to rise rapidly and DAWSON and PIKE have fallen through TURNER'S parachute, tearing it and landing on top of TURNER with great*

[9] Ex B1.3, p2
[10] Ex B1, p10
[11] Ex B1, p6
[12] Ex B1, p13
[13] Ex B1, p8
[14] Ex B1, p14
[15] Ex B1, p15

speed. The immense force has caused all three parties to sustain significant life threatening injuries and rendered them either unconscious or deceased".[16]

32. Sergeant Nowitzki reported that the Cairns Forensic Crash Unit ('FCU') attended the scene and took command of the investigation.[17]

33. In addition to the FCU, Acting Detective Sergeant ('ADS') Jeremy Philp of the Tully Criminal Investigations Bureau ('CIB') attended the scene at 1630hrs.[18]

34. ADS Philp noted Toby Turner had been covered with a white blanket and observed a separate red parachute and a separate white parachute suggesting both had been deployed.[19] He confirmed Toby's helmet was located approximately 200 metres northwest of where he was located.

35. ADS Philp walked 150 metres northwest and observed a single white parachute spread over the top of a mango tree. He says he confirmed this was the reserve parachute.[20] Below the tree was Peter Dawson and Kerri Pike covered by a white blanket. QAS paramedic House advised he cut and separated the pair, laying them side by side. ADS Philp states, "*The mango tree had minor branch damage, suggesting impact with the tree and ground may not be the actual cause of death or all injuries of Deceased TURNER and PIKE*".[21]

36. ADS Philp reports Trevor Edwards and Kelvin Mossop were in a house close to the scene. They observed a lifeless male skydiver, drift eastwards over the roof of the residence and fall in the front yard of a neighbouring property. Trevor Edwards was struck by what he later believed to be blood. ADS Philp states, "*Police advised they examined the roof of the residence and obtained what appeared to be blood samples consistent with Deceased TURNER having significant and likely life threatening injuries prior to contacting the ground*".[22]

37. Mr Mossop told QPS he could make out that there was a single person and that

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[16] Ex B1, p9
[17] Ex B1, p10
[18] EXB1.1, p1
[19] Ex B1.1, p1
[20] Ex B1.1, p2
[21] Ex B1.1, p2
[22] Ex B1.1, p2

he was 'in a bit of trouble' looking like a rag doll in the harness.[23] He said the red parachute was all twisted up and the white one hovering over him bringing the parachute jumper down.[24] Mr Edwards told QPS that the jumper was like a 'bloody rag doll' with his head down and his arms hanging limp.[25]

38. ADS Philp left the scene at 1820hrs. The FCU was still in attendance examining the scene.[26]

39. At 1830hrs, ADS Philp attended the Skydive Mission Beach outlet at The Hub, Porter Promenade, Mission Beach. He confirmed the jumpers in the plane and the order in which they jumped:
    a) First to exit was instructor Adam Hartley and customer Michaela Koblinger;
    b) Second to exit was instructor Brandon Van Niekerk with customer Andrew Price;
    c) At around the same time as the second skydivers, skydive camera operator, Richard Frank jumped and was filming the second skydivers;
    d) The third skydivers to exit were instructor Derec Davies and customer Michael Erikson; and
    e) Fourth to exit the plane were Peter Dawson and Kerri Pike, which were closely followed by Toby Turner who was last to exit the plane on a solo jump.[27]

40. Brandon Van Niekerk says his freefall was uneventful, with him deploying his parachute at approximately 5,000 feet. At approximately 2,000 feet, he observed Toby with two parachutes out. He said Toby was at a higher altitude and appeared to be struggling, like he was trying to kick out at something. He could see there was distortion to the main parachute. [28]

41. Richard Frank observed Toby's reserve and main parachutes out and that they were doing weird things by tangling up then untangling, without the main being

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[23] Ex B1.3, p33; See ExC4, p97 for unsigned QPS statement
[24] Ex B1.3, p33
[25] Ex B1.3, p34
[26] Ex B1.1, p2
[27] Ex B1.1, p2
[28] Ex B1.3, p24

'cut away' as anticipated. He could not see Toby himself.[29]

42. Derec Davies was video recording his jump with a camera attached to his left wrist. He essentially says he observed a white parachute opening above him, which he thought to be strange because it was released high. He then saw the red main parachute was also out which made him realise something was wrong. They were in a 'down plane' and then in a side by side configuration which was an indicator to him that Toby may have been attempting to land the parachutes.[30] He clarified in oral evidence that it is very possible that the main parachute was obscured at the time he saw the reserve deploy.[31]

43. The QPS obtained video recordings taken by instructors Adam Hartley and Derec Davies. They did not particularly assist the investigation.

44. Reese Goldsmith, a Skydive Australia employee on the beach, advised he was watching as each skydiver opened their chutes. He noticed Toby's reserve and main chute open and observed Peter Dawson's white parachute open. He was not able to advise as to the order the parachutes opened.[32] He took photographs of Toby for Stephen Lewis, the Chief Instructor. He deleted them after he sent them to Stephen Lewis.[33] It has since been confirmed that these photographs were deleted as the QPS extensively photographed the accident scene.

45. The QPS interviewed a number of persons, of relevance:

    a) A German tourist Denis Willma who was on the beach saw a skydiver spinning quickly down. He observed the colour red and white flashing as he observed the parachutist travel from above the water, over the land, before disappearing behind the trees in the distance[34]; and

    b) A holidaymaker at the Mission Beach Council Park, Ben Driscoll says he observed a skydiver open a chute very late. He then noticed another

[29] Ex B1.3, p25
[30] Ex B1.3 p25
[31] T2-86, 34
[32] Ex B1.1, p3
[33] Ex B1.3, p23
[34] Ex B1.1 p3

chute up higher, so with his binoculars viewed what appeared to be two motionless people, drifting westwards near Clump Point[35].

46. Ms Lucinda Foers, a Skydive Australia employee, confirmed to ADS Philp that she packed the chute of Peter Dawson and Kerri Pike and that Toby Turner packed his own chute prior to the jump.[36] She was a qualified Packer B. This allowed her to pack tandem parachute rigs. On that day she folded 26 chutes, including the rig used by Peter Dawson and Kerri Pike.[37] On packing the rigs she completed a 'Load Sheet', which records the parachute rig against the load.[38]

47. ADS Philp concluded, "*Initial examination of the information available at the time of this submission suggests the impact between the involved parties was at such a velocity that it rendered all parties either unconscious or dead. Further investigations are required to determine whether human error, mechanical/equipment failure or an accident is responsible for the apparent mid-air collision. There is no indication the accident is a result of malpractice or negligence on behalf of the associated business*".[39]

Forensic Crash Unit – Report

48. The FCU provided a 42 page report for each of the deceased persons. Essentially each report being a mirror copy of the other. Sergeant Ezard was the FCU investigator.

49. In evidence, Sergeant Ezard explained that as the QPS does not have the specialist skills to undertake a parachute investigation and instead retain people with the necessary skills to assist in the investigation.[40] In this instance, the APF were notified of the incident and Mr Richard McCooey deployed from Brisbane and Mr Michael Tibbitts from Melbourne. The accident scene was maintained until their arrival.[41] Sergeant Ezard confirmed the APF had full access to the scene and were provided as much assistance as required in the investigation.[42]

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[35] Ex B1.1, p3
[36] Ex B1.1, p3
[37] Ex B1.3, p22
[38] Ex B1.3, Appendix Two
[39] Ex B1.1, p3
[40] T1-14, 19
[41] T1-14, 24
[42] T1-15, 28

The QPS shared all of the evidence they obtained with the APF.[43]

50. Sergeant Ezard concluded that:

a) Kerri Pike attended the Skydive Australia store to complete her waiver, an Australian Parachuting Federation Registration and to undergo her pre-flight safety briefing before being geared up.

b) The flight was 'load number seven', the last for the day. The order of jumps for load number seven was pre-determined prior to the flight.

c) Peter Dawson was using a parachute rig owned by the company. They are packed and maintained by 'parachute packers' employed by the company to perform this role. He was fitted with a GoPro to his left wrist and was required to capture set recordings throughout the skydive experience.

d) Toby Tuner was using a solo sports parachute that was personally owned which he used when engaging in sport jumps. Sergeant Ezard explained investigators were not able to obtain Toby's jump log record as it is believed it was kept on a mobile phone App.[44] There was anecdotal evidence that Toby had owned the sport parachute for two years.[45]

e) The company allowed Toby Turner to undertake a sport jump provided there was sufficient space on the aircraft. He packed and maintained his own parachute.

f) Toby's main parachute canopy sustained a hole from impact and the lines had become twisted which suggest the main parachute had been deployed and had sustained a mid-air impact, which deflated the parachute and caused it to commence twisting. The main parachute 'cut away' handle had been pulled out at the scene by Skydive Australia staff to allow QAS to assess the injuries sustained. The reserve

[43] T1-16, 0
[44] T1-18, 23
[45] T1-29, 5

parachute had been deployed without any line twists and there was no damage to the main canopy.

g) Investigations conducted suggest Toby Turner's reserve parachute was inadvertently deployed because of a mid-air collision, in which the cut away handle had been ripped away, deploying the reserve parachute.

h) Peter Dawson's parachute was fitted with a drogue parachute, which is deployed shortly after leaving the aircraft. It was observed the drogue had been deployed. It was saturated in blood and torn which was consistent with a mid-air collision. The main parachute was still contained within its container with no indications of an attempt to deploy the parachute. The reserve parachute had been deployed and there was no damage to the canopy and no line twists. The handles that control the reserve parachute were still housed and had not been used. The reserve parachute had deployed due to the operation of the Vigil Automatic Activation Device ('AAD').

i) Initial scene investigations indicate that Peter Dawson and Kerri Pike remained within freefall until the AAD fired at 1,900 feet (580 metres). The main parachute is typically deployed at 5,000 feet (1,525 metres). This suggests Peter Dawson had sustained significant injuries rendering him incapacitated at a height above 5,000 feet. The AAD was examined and revealed that the closing loop on the reserve parachute had been cut as the unit is designed to do, releasing the reserve canopy.

j) The Vigil AAD was forwarded to Advance Aerospace Designs for download.[46] They produced a report. Under the heading 'remarks', it states, "*The unit registered 4 jumps in the last switch on session with a ground reference pressure of 1016mBar which is corresponding with the dive DZ location (Mission Beach Queensland Australia) on 13 October 2017. The exit on the last jump graph No.2443 is at ± 4300m. The first part of the freefall is quite unstable and we see a clear change of speed from ± 1750m most probably due to the mid-air collision. The*

[46] Ex B1.3, p9

tandem stays in freefall until the correct activation of the Vigil (ADD) at 696m. The reserve is released and we see a normal deceleration going to a stable ride down of ± *4m/s. The recording in memory stops like designed 24 sec after the end of freefall detection. Here it is at 336m and means we don't know what happened below this altitude"*.

k) Atmospheric conditions were not a factor in the accident.

l) Both Peter Dawson and Toby Tuner were wearing altimeters. The altimeter being worn by Peter Dawson was sent to Alti 2 Incorporated. It revealed it was jump number 7,731 and was conducted at 1509hrs. It confirms the jumpers departed the aircraft at 14,100 feet (4,297 metres) where they were in freefall for 70 seconds until reaching 1,400 feet (426 metres), where the decent rate slowed until they landed at 180 seconds. At 40 seconds, when they were at 7,500 feet (2,286m), their speed grossly increased and spikes momentarily at 300mph (482km/hr), which is suggestive that an impact has occurred at this point.

m) The altimeter being worn by Toby Turner was sent to the manufacturer in Denmark. It was not possible to download any data and the device did not log any significant data that could be useful in the investigation. Late in the inquest it was established that some of the data could be obtained. I refer to that data below.

n) Peter Dawson was wearing a GoPro. It was forwarded to QPS Electronics section to ascertain if any additional data could be extracted from the internal memory of the unit. While it captured additional footage it did not capture any direct evidence showing the impact. Sergeant Ezard stated:

> "*Of note, momentarily before the end of the footage the body position of DAWSON starts to change as well as the facial expression on both DAWSON and PIKE. You can also see in the sunglasses being worn by DAWSON what appears to be a reflection of the canopy of TURNER immediately before impact*'[47].

[47] Ex B1.3, p13

o) All of the equipment was inspected and examined at the scene under the direction of QPS by the Drop Zone Safety Officer, Brandon Van Niekerk and APF investigators, Richard McCooey and Michael Tibbitts.[48] QPS engaged APF Rigger Marcel Van Neuren to examine the parachute rigs.

p) The rosters of Peter Dawson and Toby Turner were examined. They were on days off prior to the accident day. Fatigue was not considered to be a contributing factor.[49]

51. The QPS investigation of the GoPro also revealed:

a) The conversation observed between Peter Dawson and Kerri Pike prior to leaving the plane could not be clearly understood;
b) Peter Dawson departed the aircraft 1.2 seconds prior to Toby Turner;
c) Toby Turner approached Peter Dawson and Kerri Pike 19 seconds after departing the aircraft wherein Toby shakes their hands (relative work) and moves away at the 24 second mark; and
d) Peter Dawson and Kerri Pike continued to have an uneventful freefall until the video suddenly stopped at 36.2 seconds from the time they departed the aircraft.[50]

52. The QPS were able to break down the GoPro footage frame by frame to provide a timestamp so the timestamp could be overlaid to the events.[51] On that basis, Sgt Ezard confirmed the chronology concerning the jumps and timing of the jumps is accurate.[52]

53. Mr Pike was recording the jump on his mobile phone. The data was corrupted but recovered by Cairns Electronic Evidence Examination Unit. It captures a white parachute to the left of the screen. It does not capture Peter Dawson and Kerri Pike either during freefall or under canopy.[53]

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[48] Ex B1.3, p8
[49] Ex B1.3, p37
[50] Ex B1.3, p14
[51] T1-23, 12
[52] T1-23, 15
[53] Ex B1.3, p15

54. QPS requested paramedic House conduct a video walk-through of the scene to document and record his observations. The video was included in the brief of evidence (BOE).[54]

55. QPS requested the APF investigators conduct a walk-through of the scene to document and record their observations. The video was included in the BOE.[55]

56. QPS requested Chief Instructor, Stephen Lewis assist with a post-accident inspection.[56] He saw there was significant damage to Toby's parachute, which implied that his parachute opened under the tandem, and that they had gone through his parachute.[57]

57. APF Rigger Marcel Van Neuren provided QPS with a report.[58] He found:

   a) the tandem equipment being used by Peter Dawson and Kerri Pike was serviceable and the reserve canopy had been deployed likely as a result of the AAD firing. The reserve handle showed no indication of being pulled;

   b) the main canopy used by Toby Turner had significant damage to both the top and bottom skins as well as the ribs and cross bracing of the rear centre cell. It was in serviceable condition prior to the accident; and

   c) the main canopy used by Toby Turner was very small for the deployment bag. The main bag and container were very soft indicating the main canopy was too small for the system. He states, "*the closing loop could be pulled a long distance past the last grommet upon closing the container meaning there was practically no tension on the closing loop"…*and *"I therefore believe the most likely scenario would be that the relative wind would have opened the pin cover followed by the bridle being extracted, the pin pulled, main bag leaving the container which would in turn extract the pilot chute followed by canopy deployment*".[59]

[54] Ex B33
[55] Ex B32
[56] Ex B1.3, p35
[57] Ex B1.3, p35
[58] See Ex C4, p38 for the report
[59] Ex ExB1.3, p12

58. Marcel Van Neuren was requested by QPS to re-pack the parachute. This was recorded and showed the loose closing loop and lack of tension.[60]

59. A fellow instructor, Adam Hartley advised that if the container and main were not compatible it may have been an issue and the main canopy is the responsibility of the owner to ensure that it is safe.[61] He states, "*given our training, one would think it be common sense when changing a canopy that it must be within the manufacturers tolerance*".[62]

60. Another instructor, Damien McGrath advised he is aware that the container size to parachute pack is relevant because if a container is too loose, it can come open as simply as hitting the door of the plane, or someone hitting you in freefall. He explained most people would be aware of the risks associated with a small pack volume and having a loose closing loop. He expected someone with Toby's experience would know the difference of having a small pack volume. He was aware of manufacturer guidelines surrounding container pack volumes but says there are no regulations in place to have it inspected like what is required for reserve parachutes.[63]

61. FCU investigators interviewed the best friend of Peter Dawson, Austin Lawson.[64] Austin was a fellow tandem instructor but on a day off on the day of the accident. He resided close to the jump site. At the time of the accident he was in his back yard with a friend, Ray Worrall. They were was watching the jumps. Austin saw the 4th jumper drogue at about 5,000 feet, at opening height he saw a reserve come out and he could see red on the canopy or beside it. He then saw another jumper falling away and the jumper got very low with only his drogue out. He watched the jumper and saw the reserve chute open at around 1,100 feet, which he immediately thought, was because of the AAD firing. He also noticed that it was a large reserve, which made him think that it was a tandem parachute.[65] He looked up and saw the first parachute, which he could now see had two

[60] Ex C4, Appendix E
[61] See Ex C4, p79 for the unsigned QPS statement
[62] Ex B1.3, p24
[63] Ex B1.3, p30
[64] See Ex C4, p71 for unsigned QPS statement
[65] Ex B1.3, p30

parachutes open.

62. He went to search for the parachutists. He saw Toby being attended to by others and continued to look for the tandem divers. He found a white reserve parachute draped over a tree. He was the first to arrive to Peter Dawson and Kerri Pike. He rang Triple 0, neither had a pulse. He observed the drogue was deployed and had been covered in blood and that the reserve handle was still in place, which indicated to him that the AAD had activated at around 1,900 feet. He tried to get them free for about five minutes before others from his workplace arrived to help.[66]

63. Regarding the packing of a parachute, he says there are manufacturer's recommendations and it is something that you try to follow to the best of your ability and you can see and feel that it (container / chute) is too loose. He further added that if you're a couple of square feet under a guideline, *'it's not a big deal. It's just a recommendation'.*

64. Raymond Worrall, another fellow instructor who was with Austin Lawson, saw people doing Cardio Pulmonary Resuscitation ('CPR') on Toby Turner. He assisted by undoing the harness. He pulled the cut away handle and removed the risers from Toby's shoulder to aid in CPR.[67] He stayed with Toby holding his hand until he was declared deceased. He then went to assist Austin Lawson who was trying to get Peter Dawson and Kerri Pike out of the tree.[68]

65. Glenn Dickson was another instructor. He had worked that day but was at home when the accident occurred. He explained that the company owns the tandem parachute rigs, however solo jumpers own and use their own rigs. He believed there were manufacturer recommendations for each size of the main container. He knows the pack volume is correct by basically closing the container and putting the pin in. He said, "*It's about the force you need to actually put the pin in, so the pin is tight*".[69]

66. Chief Instructor Lewis stated, "*there is no regulations around the main canopy to*

[66] Ex B1.3, p31
[67] Ex B1.3, p32
[68] Ex B1.3, p32
[69] Ex B1.3, p32

container volume, there are recommendations from the manufacturer who will recommend the size of the canopy that will fit inside the container"…and "*There are a multitude of different design and other things that needs to be taken into consideration when changing to a different parachute*"… and "*there are no APF regulations that require someone to comply with a manufacturers recommendation to ensure that the pack volume is suitable for the container in which it is being fitted into"*.[70]

Skydive Australia

67. Sergeant Ezard posed a series of question to the Chief Executive Officer and Executive Director of Experience Co (Skydive Australia), Anthony Ritter. Anthony Ritter confirmed:

    a) Since the accident a new Tandem Camera Flying Procedure had been introduced which includes acceptable flying positions for a camera flyer;

    b) There are currently no APF regulations with regards to horizontal separation between a tandem camera flyer and a tandem pair – it is an industry recognised component of the job for the tandem camera flyer to get close to the tandem pair and if acceptable, interact with the tandem student;

    c) They still allow employees and contractors to undertake sport jumps if there is available space on the plane – it allows them to develop and advance their skills. Allowing another skydiver to jump with a tandem pair is covered in the new Tandem Camera Flying Procedure. While the current APF Operational Regulations stipulates that a skydiver with a 'C' licence (100 jumps) may jump with a tandem pair, their internal policy stipulates that a skydiver must have a 'D' licence (200 jumps) before flying with a tandem pair; and

    d) APF Regulations stipulate that a parachute system must be inspected and have its reserve parachute repacked every 12 months. Skydive Australia released new Sport Gear Check Procedures that stipulate all

[70] Ex B1.3 p35

sports equipment in use, must also be checked and signed off by an Instructor every six months.[71]

Issues Identified by QPS for Consideration

68. Understanding of pack volume manufacturer guidelines to ensure compliance was identified as an area of concern. Sergeant Ezard states, "…*Skydivers are aware but confused around what a manufacturer's requirement is to ensure sufficient pack volume. When interviewing people involved in the industry, their understanding of what sufficient pack volume and tension is, remains unclear and subjective to their own interpretation*". [72]

69. Sergeant Ezard recommended, "*it would be prudent that the regulatory body, the APF, review their current regulations and develop a suitable strategy to ensure that individuals comply with a manufacturers recommendations*".[73] Further that, "*Consideration should be given by the APF to implement a regulation that requires a main canopy be inspected and certified to be airworthy by an independent Rigger or suitably qualified person, similar to the APF regulations currently existing for reserve parachutes*".[74]

70. Sergeant Ezard also found that the collision could have been avoided by ensuring there was a horizontal separation between tandem parachutists and recreational sports skydivers. It is a clear breach of the Tandem Masters Handbook, that states, "*the jumper/s should never pass directly over the top or underneath the tandem. Burble related collision can occur*".[75]

Australian Parachuting Federation fatality investigation

71. The Australian Parachuting Federation (APF) prepared a Fatality report. Mr Richard McCooey the APF Safety and Training Manager signed off on the report including the conclusions and recommendations.

72. At the time of his report, Mr McCooey was the full time APF National Safety and

[71] Ex B1.3, p15-16
[72] Ex B1.3, p36
[73] Ex B1.3, p35
[74] Ex B1.3, p37
[75] Ex B1.3, p37

Training Manager. He has previously investigated 14 fatalities over a 25 year period. Michael Tibbitts, field investigator; Kim Hardwick, APF Technical Officer; and Marcel Van Neuren, Parachute Rigger assisted in the compilation of the report.

73. Prior to the final APF report being drafted, Mr Tibbitts, the field investigator who attended the scene with Mr McCooey provided an APF field investigation report.[76] Mr Tibbitts is one of three APF safety and training officers. The Queensland Safety Officer at the time of the accident was Mr Brandon Van Niekerk. As he was the Drop Zone Safety Officer at the time of the accident he was precluded from taking part in the investigation (to avoid any conflict of interest). Mr Tibbitts is the Safety and Training Officer for Victoria and New South Wales.[77]

74. I refer to the additional information provided within the APF report only to the extent that it was not addressed by the FCU.

75. Mr McCooey provided a description of the accident:

> "*DAWSON'S GoPro footage shows an ordinary tandem exit and freefall for 35 seconds before cutting out abruptly. The video generally shows nothing untoward and gives no indication of any issues. Later detailed review of individual frames reveals additional potential evidences* (sic)*…TURNER exited 2-3 seconds after the tandem pair and was watched by DAWSON. After a normal delay, DAWSON deployed the drogue in a stable, belly-to-earth orientation. With the stablising drogue deployed (drogue-fall), the tandem pair descended as is standard, in the column of air, without horizontal movement.*
> *Note: a tandem pair in freefall with the drogue deployed (drogue-fall), falls at a compatible descent rate with a solo skydiver using sports parachute equipment, which doesn't require a drogue.*
>
> *TURNER flew over to the tandem pair, making intentional and controlled hand-to-hand contact with DAWSON and then shook PIKE's hand. TURNER was only briefly fully in-frame of the GoPro footage and appeared relaxed and in*

[76] Ex C4, p143
[77] T1-31, 0-10

control. There is no evidence of any equipment issues while he is in frame. Witnesses on the ground and in-air skydiving witnesses, saw a parachute open around 5,000-6,000 ff. The tandem pair of DAWSON/PIKE were observed continuing in drogue-fall.

Shortly thereafter TURNER was seen to be in a two-canopy-out situation, initially in a side-by-side configuration flying south. The reserve parachute appeared fully inflated, whilst the main parachute appeared partially inflated. His canopies slowly turned 270 degrees to his left and ended up flying to the east. There is some evidence they then moved into a downplane configuration until impact with the ground. No input to controlling the canopies was observed by witnesses. At least one witness described him as motionless, like a rag doll dangling. He landed approximately 1.2km to the north of the intended DZ and 1.4km west of the approximate exit point.

The tandem pair's Automatic Activation Device (AAD) activated as designed, with the reserve parachute apparently deploying normally and fully. No flight directional changes were observed by witnesses, with the canopy flying with a descent rate consistent with a fully open and functioning parachute. They landed at the base of a tree approximately 150m from the sport jumper."[78]

76. With respect to Peter Dawson's qualifications and experience, it was reported:
    a) He was a member of APF as a licensed parachutist (#3950690);
    b) He was Certificate Class F #783;
    c) He had instructor ratings and endorsements – Instructor C with Tandem #888 and Packer A #1276;
    d) He had a medical certificate valid until 13 September 2020;
    e) He had completed 7731 jumps according to his N3 (electronic altimeter)
    f) He had competed approximately 5,000 tandem jumps;[79]
    g) His revalidation had been carried out on 16 September 2016; and
    h) He had passed the examination requirements to hold the higher instructor qualification of 'Instructor C' in September 2017[80].

[78] Ex C4, p6
[79] Ex C4, p7
[80] Ex C4, p12

77. With respect to Toby Turner's qualifications and experience, it was reported:

a) He was a member of APF as a licensed parachutist (#150547);
b) He was Certificate Class F #816;
c) He had instructor ratings and endorsements – Instructor A (highest APF instructor rating), with Tandem #712 and Packer B #1827 (10 years plus);
d) He had a medical certificate valid until 13 November 2019;
e) He had completed approximately 8,000 jumps;
f) He had completed approximately 5,000 tandem jumps;[81] and
g) His revalidation period was extended past June 2017 for a further year, as during the period he participated in APF approved professional development[82].

78. It was reported that both jumpers likely logged their dives in a smartphone App and as a result investigators had been unable to access recent personal skydiving logs.[83] The issue of logs is addressed further below.

79. Prior to commencing work at Skydive Cairns on 16 December 2016[84] Toby was involved in setting up a new skydiving operation at Mission Beach, Altitude Skydiving. He was the Chief Instructor. That business operated for about 18 months. Toby moved to the Skydiving Cairns Drop Zone when Altitude Skydiving ceased trading.[85]

80. There were no reported issues with the equipment used during the skydives. The investigator concluded, "*Both sets of equipment were in above average condition. Both the main and reserve parachutes would have opened as intended if deployed correctly*".[86]

81. As reported in the QPS FCU report, the main issue identified by the APF was Toby Turner's main parachute being too small for the deployment bag. Mr Marcel Van Neuren re-packed Toby's main parachute. Mr McCooey states:

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[81] Ex C4, p8
[82] Ex C4, p12
[83] Ex C4, p7
[84] Ex B4.16.4
[85] T2-5, 2-6
[86] Ex C4, p8

"*VAN NEUREN re-packed the main parachute into the deployment bag and found the canopy to be far too small for the bag. As the container was closed, the closing loop was found to be several inches too long, creating almost no pressure on the pin. The closing flaps of the container were very loose and consequently so was the bridle cover from the Bottom of Container (BOC) pouch where the main pilot chute is stowed prior to deployment. The pin cover flap was also very loose*".[87]

82. The relevant equipment used by Toby Turner included the harness/container which was manufactured by Parachute Laboratories, Inc. Racer 2K3, Serial Number: 51404, DOM: 12/2004; and the Main parachute: Performance Designs – Velocity 90, Serial Number: 0029660, DOM: 08/2008.[88]

83. Mr McCooey of the APF contacted the company that manufactured Toby Turner's parachute harness and container assembly to ascertain pack volume.[89] He states, "*After researching the serial number, Parachute Laboratories Inc. advised that the main container was suitable for a 150 square feet parachute. With some adjustments to the main closing loop, this could allow a parachute as small as 135 square metres or as large as 170 square feet. The main parachute in TURNER's container was 90 square feet and clearly too small and loose for the container*".[90]

84. Mr Tibbitts explained Toby's Velocity 90 had cross-bracing inside the canopy, which expands its volume, so it was probably equivalent to (using industry terminology) a '107'. Mr McCooey agreed with that estimation in oral evidence. Toby's main container could take a '150', possibly a '135'. The next step down would be a '120' and then a '107'.[91]

85. By all calculations the evidence supports a finding that the canopy to container ratio was incompatible, in that the canopy was too small in volume for the main container (or the main container too large for the canopy).

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[87] Ex C4, p9 – see p38 for Mr van Neuren's report
[88] Ex C4, p9
[89] Ex C4, p110 (nb. email chain is incomplete)
[90] Ex C4, p16
[91] T1-90, 15

86. Mr McCooey advised it is normal practice for a licensed solo (sports) skydiver to pack their own main parachute after each jump and this is likely what occurred.[92] The investigator confirmed there are no specific APF regulations, which govern main parachute and container compatibility.[93]

87. At inquest, much time was devoted to the APF regulations regarding equipment and the compatibility of a main parachute and a container, and the application of those regulations.

88. With regard to the damage found on Toby Turner's helmet, Mr McCooey found, it "*is consistent with a force several centimetres long being applied between the helmet and the wearer in an upward motion, peeling a flap of the carbon fibre loose. A possible explanation for this, are the lines deploying up past his left shoulder snagging on the helmet on their way past".*[94]

89. Mr McCooey advised the closing speed between a tandem pair in drogue-fall and a skydiver under a fully open parachute, is approximately 200 kilometres per hour. This would vary depending on the precise state of the main parachute deployment. He states, "*Injuries to all three skydivers support a high-speed freefall impact and most unlikely to be survivable*".[95] He is of the view the later ground landing impact by all three skydivers is likely to be irrelevant.[96]

90. In the APF report Mr McCooey stated, "*it is well known by all skydivers that they should avoid positioning themselves during the freefall/drogue-fall descent of a skydiver, either directly above or below other skydivers. This is to reduce the chance of a collision, in the case of an unexpected premature deployment of the parachute*". [97] The investigator referred to the 'APF Tandem Endorsement Guide 2007 Part 6: Relative Descents'.[98]

91. Mr McCooey formed the view based on the injuries Toby Turner suffered, it is unlikely he was alive or in a physical condition to have unstowed his steering

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[92] Ex C4, p17
[93] Ex C4, p16
[94] Ex C4, p9
[95] Ex C4, p11
[96] Ex C4, p11
[97] Ex C4, p17
[98] Ex C4, p112 – Part 6:Relaitve Descents

toggles or to activate his reserve parachute. Both of which happened. It is thought Toby's reserve deployed by the tandem pair brushing/knocking against Toby Turner.[99]

92. Mr McCooey concluded Skydive Cairns appeared to have been operating within the APF regulations and that the company was last audited on 21 August 2017 by Brett Newman, APF Safety and Training Officer, with no non-compliances detected.[100]

93. Fatigue was not thought to be an issue with the investigator reporting, "*the number of jumps DAWSON and TURNER completed during the day was unremarkable*".[101]

94. Mr McCooey says Peter Dawson had previously been involved in 10 reported incidents over the period 2007 to 2017. Further, that Toby Turner was involved in 12 reported incidents over the period 2005 to 2017. He did not provide any detail of the prior incidents in his report, stating, "*the number and significance of these incidents is normal for these types of active skydivers and shows both instructors responded to previous emergency situations successfully*".[102] The details of the incidents were subsequently provided and they were not relevant to the accident.

95. In conclusion Mr McCooey stated:

> "*Slightly above DAWSON's planned deployment height and whilst in drogue-fall, the tandem pair made heavy contact with TURNER whose main canopy was deploying.*
>
> *The collision appeared to have happened with DAWSON/PIKE and TURNER facing each other and TURNER's body making the initial impact at about 45-degree angle. The 45-degree face-to-face impact suggests TURNER was flying in a back-to-earth or partial back-to-earth orientation whilst his main parachute deployed.*

[99] Ex C4, p17
[100] Ex C4, p11
[101] Ex C4, p11
[102] Ex C4, p11

The collision has caused significant damage to TURNER's main canopy, leaving it collapsed behind him in flight. The collision has dislodged TURNER's reserve handle, allowing a clean deployment of his undamaged reserve. The relative upward movement of TURNER past the tandem pair has caused the damage to the tandem drogue.

The tandem pair continued in drogue-fall for close to 4,000ft, until the AAD activated and deployed the reserve at approx. 2,000ft.

Based on the nature of their injuries as related to the investigator by police, all three were killed immediately upon the collision".[103]

96. The main cause of the accident was found to be a premature deployment of Toby Turner's main parachute while directly underneath the tandem pair of Peter Dawson and Kerri Pike. Contributing factors were Toby's inappropriate container and canopy configuration, which was compounded by a main closing loop several inches too long; and Toby's position directly below the tandem pair and probable back-flying/vertical orientation.[104]

97. With respect to the main parachute and container of Toby Turner, Mr Van Neuren was of the view, that due to the lack of tension on the flaps it would have been very easy for the relative wind to open the pin cover flap and extract the bridle from underneath the side flap and bridle cover, especially in a back to earth flying position. He stated, "*due to the lack of tension on the closing loop any exposed bridle could have easily pulled the closing pin allowing the deployment bag to leave the container starting a premature deployment sequence*".[105] Further, "*I therefore believe the most likely scenario would be that the relative wind would have opened the pin cover followed by the bridle being extracted, the pin pulled, main bag leaving the container which would in turn extract the pilot chute followed by canopy deployment*".[106]

98. The APF's made four (4) recommendations at the conclusion of their

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[103] Ex C4, p18
[104] Ex C4, p18
[105] Ex C4, p49
[106] Ex C4, p49

investigation, they are:

a) Reinforce to all jumpers, the dangers of being positioned during freefall either directly above or below other skydivers;

b) Standardise main parachute packing training, particularly in relation to main canopy size compatibility with containers;

c) Further educate jumpers on the importance of maintaining equipment to an appropriate standard for any freefall orientation rather than just traditional belly to earth; and

d) Operators to introduce standards for solo equipment used in a commercial environment. [107]

99. Mr McCooey provided a detailed update concerning the implementation of the APF recommendations at the inquest.[108] I accept that the APF have made a concerted effort to action the recommendations and have widely disseminated information concerning the accident, including prevention of future such accidents.

100. Those with leave to appear at the inquest generally acknowledged that more could be done.

United Kingdom Civil Aviation Authority – Peer Review

101. Mr Tony Rapson, Head of the General Aviation Unit in the United Kingdom Civil Aviation Authority was engaged by the Office of Northern Coroner to peer review the APF Report and the evidential annexes to that report.[109] He agreed with the conclusions of the APF and stated, "*The evidence and the analysis clearly indicate this conclusion, and I could see nothing in the report or evidence that contradicted this conclusion. These conclusions and the contributing evidence lead logically to the recommendations made*".[110]

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[107] Ex C4, p19
[108] Ex C37
[109] Ex G4
[110] Ex G4, p2

102. Mr Rapson noted the APF did not investigate the 'How' and 'Why' Toby ended up immediately under Peter and Kerri or why Toby's canopy was too small for the container. He noted the purpose of the APF report was to ultimately recommend improvements in safety and to reduce the risk of a repeat occurrence as quickly as possible. He stated, "*I do not consider that the missing information would materially affect the safety investigation; the overall safety conclusions reached, or the recommendations made*".[111]

103. The 'How' and 'Why' were among the primary issues considered during the inquest. They are discussed in detail below.

The interface between Civil Aviation Safety Authority and the Australian Parachuting Federation

104. The Civil Aviation Safety Authority ('CASA') was granted leave to appear at inquest. CASA provided information concerning the regulation of the parachuting / skydive industry and its oversight of the APF. Mr Stephen Fickling, the Sport Aviation Operations Officer within the General, Recreational and Sports Aviation Branch of CASA provided a detailed statement.[112]

105. Mr Fickling is a very experienced skydiver. He was a member of the APF between 1994 and 2014 and during that time conducted more than 8000 individual parachute descents. A large proportion of those jumps being Tandem descents made as a Tandem Instructor. He was a registered Chief Instructor of his own company and at other operations.[113] He was employed by CASA as a Subject Matter Expert in parachuting operations in 2015.[114] He resigned his membership from the APF on his appointment to CASA.

106. CASA regulates the operation of Self-Administering Sports Aviation Organisations (SAO) and Recreational Aviation Administration Organisations (RAO). The APF was one of these organisations. Mr Fickling stated, "*Sport aviation, like many other forms of recreational activities, involves an element of personal risk. Members of the organisations operate on the premise of informed participation and acceptance of the risks involved. Without membership a person*

[111] Ex G4, p2
[112] Ex J1
[113] Ex J1, p2
[114] Ex J1, p3

is not legally permitted to take part in the activities".[115]

107. Mr Fickling stated, "*The safety regulation of civil aviation in Australia is achieved by means of the Commonwealth civil aviation legislation which includes the Civil Aviation Act 1988 ('CAA'), the Civil Aviation Regulations 1988 ('CAR'), the Civil Aviation Safety Regulations 1998 ('CASR'), various Civil Aviation Orders ('CAOs') as well as other delegated legislation and instruments made by CASA*".[116]

108. The self-administering regime is facilitated by a mixture of exemptions (provided primarily pursuant to the CAOs) from compliance with otherwise applicable provisions of the civil aviation legislation as well as other legislative approvals and direction. Generally members must comply with the operational and technical rules of their organisation as specified in an organisation's operational and procedural manuals approved by CASA.[117]

109. Mr Fickling advised that organisations such as the APF exist to provide oversight of their member activities and to provide safety assurance to CASA that activities are being conducted safely and in compliance with the applicable regulations.[118] Any breach of an organisation's operational manual by a member is subject to disciplinary action by that organisation. In appropriate circumstances CASA may decide to intervene or take direct action in relation to the conduct of a member of an organisation.[119]

110. Mr Fickling quoted statistics concerning parachute jumps in Australia. He states, "*At present some 385,000 parachute jumps are made each year of which some 180,000 are tandem jumps conducted by temporary members, with some 250 of that number being temporary members of the ASA and the balance being with the APF*".[120]

111. Regulation 152 of the CAR provides that parachute descents shall not be made unless authorised in writing and conducted in accordance with the written

[115] Ex J1, p4
[116] Ex J1, p24
[117] Ex J1, p4
[118] Ex J1, p5
[119] Ex J1, p5
[120] Ex J1, p5

specifications of CASA. With respect to the APF, instrument CASA 66/16 dated June 2016 authorised members of the APF to make parachute descents in accordance with the APF's Operational Regulations as in force on 1 July 2016 (the Operational Regulations in force at the time of the accident are dated 15 May 2017, it may be that the instrument had not been updated).

112. The APF does not have any statutory power to make regulations. That power is one of the Commonwealth. APF 'Operational Regulations' are therefore rules made by the organisation and which their members are required to observe.[121] CASA is consulted in the making of the operational rules. In the event that a proposed rule is inconsistent with the statutory framework, then CASA would decline to consent to such a rule.[122]

113. Mr Fickling provided some background information concerning the APF. It is a not for profit organisation, it became a company limited by guarantee in 2015 with a board of volunteer directors and various paid employed staff. It had 3,241 full time members as at 31 December 2017. In addition, as referred to above there were more than 180,000 first-jump students who undertook a parachute descent as a tandem parachutist on an annual basis.[123]

114. The APF Operational Regulations, APF Regulatory Schedules, APF Jump Pilot Manual and APF Training Operations Manual contain the procedures and instructions necessary to ensure safe operation of aeroplanes operated in support of parachute and parachute training operations conducted by members of the APF. Instrument CASA 66/16 requires compliance with the APF Operational Regulations.[124]

115. The APF became a self-administering organisation in 1986 and a Deed of Agreement was entered between CASA and the APF.[125] Initially the Deed was aimed at supporting the organisation with costs of international competition as a form of grant-in-aide. In later iterations, the Deed has increasingly focused on the provision of safety related undertakings by the organisation and fulfillment of

[121] Ex J1, p7
[122] Ex J1, p7
[123] Ex J1, p8
[124] ExJ1, p9
[125] Ex J1, p7

self-administering functions as set out in the statement of expectations.[126] The APF reports to CASA on its activities as required under the Deed of Agreement.

116. CASA conducts scheduled auditing of the APF each two to three years. The audit entails a sampling of records and documentation generated by the APF in the performance of its self-administering functions.[127]

117. In accordance with its obligations under the funding Deed, the APF conducts annual audits of each of its member training organisations.[128] CASA conducted its own audits of two APF member-training organisations, one in 2015, the other in 2018.

118. Mr Fickling outlines CASA's position with respect to resource allocation for inherently hazardous aviation sporting activities such as parachuting.[129] Commonwealth resources are limited and allocated accordingly.

119. Mr Fickling advised there were fundamental changes on foot concerning the regulation of the industry. This is due to the introduction of Part 149 of the CASR titled 'Approved self-administrating aviation organisations ('ASAO') which was tabled in both the House of Representatives and the Senate on 13 August 2018. It is expected to be of operative effect in the first quarter of 2019.[130]

120. It provides a more formal and consistent framework for the regulatory oversight of sport and recreational aviation organisations. Part 149 will require, among other matters, for an ASAO to hold an approval listing its functions; appropriate structure and personnel; an exposition setting out the safety management, audit and surveillance systems; process for provision of information to CASA; and, a process for CASA to review internal ASAO decisions.[131]

121. I note the inclusion of Parts 149 and 105 into the CASA regulations and further refer to those regulations and effect of same below.

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[126] Ex J1, p10
[127] ExJ1, p13
[128] ExJ1, p14
[129] Ex J1, p17
[130] Ex J1, 4
[131] Ex J1, p5

Comments on the Accident by Mr Fickling

122. Mr Fickling states, "*from my review of the APF investigation report and evidence contained within, I am in general agreement that the 'Summary of Causes' contained within the report which lists the most likely and probable causes of the accident. The main factor being the apparent premature opening of Mr Turner's main parachute while he was situated directly below the tandem pair whilst they were in freefall*".[132] Mr Fickling agrees that it did not appear that Toby's main parachute was compatible with his container.[133]

123. Mr Fickling advised it is widely known and universally accepted within the parachuting industry that no parachutist should fly directly underneath any other parachutist (including parachutists) whilst in freefall.[134]

124. Due to Mr Fickling's extensive experience and being a Subject Matter Expert, the accident was further explored with Mr Fickling in oral evidence. This is addressed below.

Australian Parachuting Federation Regulations (Rules)

125. The relevant APF Operational Regulations at the time of the accident were effective as of 15 May 2017. The status is marked 'mandatory'. The document states, "*The Operational Regulations (OR) are approved by CASA as APF's primary regulatory document. Their main purpose is to describe principal safety and training requirements and the duties and responsibilities of all those involved in parachuting. They outline the classification and rating frameworks, and set out the conditions and requirements for parachuting operations*".[135] The Operational Regulations are 37 pages in length. I attempt to provide a brief summary of the pertinent clauses, relevant to the inquest.

126. According to Clause 6.1.1, the appointed Chief Instructor of a Training Organisation is the person accountable by the APF for that organisation's compliance with all rules and regulations of the APF.[136] A training organisation

[132] Ex J1, p22
[133] Ex J1, p22
[134] Ex J1, p22
[135] Ex C3, p55
[136] Ex C3, p64

is an APF club that has an appointed Chief Instructor, and provides facilities for training parachutists.[137]

127. The Chief Instructor is responsible for ensuring an adequate and appropriate Safety Management System ('SMS') is documented and implemented; all parachutists involved in parachuting activities conduct themselves in accordance with the organisation's SMS and comply with all rules and regulations of the APF; and rating holders and persons appointed to those positions as defined by clause 6.1.4 operate within the SMS; and ensure all students, novice parachutists and certified parachutists under their supervision conduct themselves in accordance with that organisations SMS; and comply with all rules and regulations of the APF.[138]

128. Clause 6.1.6 outlines the DZSO Responsibilities.[139] They include at subparagraph (a) that the DZSO must have a reasonable system in place for ensuring that: (i) all parachuting operations are conducted in accordance with APF regulations; and (ii) operations are conducted in accordance with the organisation's SMS. Further, at subparagraph 6.1.6(b)(iv) that a parachutist's equipment complies with Part Seven of the regulations.

129. Clause 6.1.11 outlines an individual's responsibilities. They include at subparagraph (a) that a parachutist not contravene any provisions of the regulations; and (d) that a parachutist ensures their equipment complies with Part Seven of the regulations.[140]

130. Clause 6.1.12 outlines the responsibilities of a packer/rigger. They include at subparagraph (c) that they ensure any equipment deficiencies or defects noticed within the course of enacting their duties as Packer/Rigger are dealt with according to the regulations.

131. Clause 6.2.1 requires that members must act in a manner, which is safe and not dangerous to themselves or others in the course of parachuting activities.

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137 Ex C3, p59
138 Ex C3, p64
139 Ex C3, p65
140 Ex C3, p65

132. In accordance with clause 7.1.1, a parachutist must wear a harness and container system that complies with APF equipment standards and the TOM (Training Operations Manual) and which has at least two parachutes, one of which must be a reserve parachute.[141]

133. The Equipment Standards are defined in the APF Regulatory Schedule 50. It is the "*Mandatory or optional standards for equipment, including certified and not certified parachute parts, published by the APF as 'Equipment Standards', including previously issued APF 'Service Bulletins' (SB) and 'Rigging Advisory Circulars (RAC)*'".[142]

134. The Service Bulletins are located on the APF website. It includes hyperlinks to voluminous documents concerning equipment. On the webpage, it states, "*While every effort is made to maintain and update this list, the APF makes no claims that it is either definitive nor exhaustive. Users are advised to contact the manufacturers/federations/aero clubs/regulatory bodies, directly to ensure that they have the most up to date information on the parachuting equipment they are working with*".[143]

135. The relevant Rigging Advisory Circular with respect to the accident is Rigging Advisory Circular No. 215 (01 December 1991). In the RAC it is acknowledged that parachute assembly may comprise components from a number of different manufacturers. Further, it is acknowledged it is unreasonable to expect a manufacturer to establish the compatibility of other manufacturers' products with his own, given the huge range currently available world-wide. Under the heading 'APF Policy', the RAC records:

> *The responsibility for determining the airworthiness of the final parachute assembly rests with the person who assembles and packs the parachute (whether main, reserve, or both).*
>
> *The assembly or mating of parachute components from different manufactures may be made by a Packer "A" without further authorisation by the manufacturer. Each component of the resulting assembly shall function properly and may not interfere with the operation of other components. Any question about the*

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[141] Ex C3, p66
[142] Ex C13, p4
[143] Ex C34

strength, operation or compatibility must be resolved by the Packer "A" to ensure that the parachute is safe for emergency use. [it was confirmed in oral evidence and which is dealt with below, this paragraph was only referrable to reserve chutes].

136. The RAC is referred to in the Packer A training course. The training also refers to the responsibility for determining the airworthiness of the final parachute assembly as resting with the person who assembles and packs the parachute, whether main, reserve or both.[144]

137. Clause 7.1.7 deals with 'Parachute Airworthiness Certification' stating: "*A reserve or emergency parachute assembly must not be worn unless it has been certified as airworthy in accordance with OR 12.4.2 and is accompanied by an accessible packing card in accordance with OR 12.5.1; and where the equipment is used primarily by a student parachutist Training Organisation, the details of the certification are recorded in the Training Organisation's parachute packing log*".[145] There is no such requirement for main parachutes.

138. Clause 11.2.10 concerns Relative Work (RW) involving a Tandem Instructor. It states a parachutist must not engage in RW with a tandem instructor carrying a tandem parachutist unless the parachutist is the holder of at least a Certificate Class C; has the authorisation of the Drop Zone Safety Officer; and had the authorisation of the tandem instructor.[146] RW is when parachutists in descent attempt to bring themselves together or near to each other.[147]

139. Pursuant to clause 12.4, reserve parachutes are required to be checked with the details of the check recorded on a data card. There is no requirement for a main parachute to be independently checked and a record made of the check.

140. In accordance with clause 12.5.4 each training organisation is required to keep an equipment log containing a record of all packing of parachutes used for descents by students, tandem instructors and tandem parachutists.[148]

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[144] T-101, 3
[145] Ex C3, p67
[146] Ex C3, p74
[147] Ex C3, p58
[148] Ex C3, p77

141. Clause 15.3.2 refers to 'Packing Recommendations'. It states, "*Parachute packing must be carried out in accordance with the manufacturer's recommendations or the recommendations of an APF recognised publication*". The APF recognised publications include Poynter's Parachute Manual and the Federal Aviation Authority ('FAA') Rigger Handbook.[149] Poynter's Parachute Manual is no longer in publication and was not requested for the purposes of the inquest.

142. The FAA Rigger Handbook was obtained. It states, "*Mismatched component parts are among the most frequent problems found in the field. Many riggers are under the impression they can freely interchange component parts, but this may be done only within certain limits"*.[150] The handbook refers the reader to a United States Federal Aviation Authority Circular.

143. In Paragraph 11(a) of 'Assembly of Major Components' Advisory Circular 105-2E, Sport Parachute Jumping (the Federal Aviation Authority Circular), it states: "*The assembly or mating of approved parachute components from different manufacturers may be made by a certificated, appropriately rated parachute rigger in accordance with the parachute manufacturer's instructions without further authorization by the manufacturer or the FAA. Specifically, when various parachute components are interchanged, the parachute rigger should follow the canopy manufacturer's instructions, as well as the parachute container manufacturer's instructions. However, the container manufacturer's instructions take precedence when there is conflict between the two*".[151] Further, "*do not install a canopy of lesser or greater pack volume than the intended design criteria for the specific size of container, since it could adversely affect the proper functioning of the entire parachute assembly*".

144. In addition to the Operational Regulations, there are other guides, which inform APF members. In the Tandem Endorsement Guide[152], it stipulates a jumper should never pass directly underneath, as there is an issue about premature opening of a free flyer's container and a possible burble-related collision. Further,

[149] Ex C3, p82
[150] Ex G1, p104
[151] Ex G2, p14
[152] Ex C28

that the jumper has maintained free flyer friendly equipment.[153]

145. The APF have produced a training document, 'A Guide to Beginning Freeflying'.[154]

146. The application of the various APF Operational Regulations and APF requirements, in the context of the accident, are considered below.

Workplace Health and Safety

147. I requested that Workplace Health and Safety Queensland ('WHSQ') provide a statement explaining its role, if any, concerning the investigation of the deaths.

148. Mr Bradley Bick, acting Executive Director, WHS Policy and Engagement Services within the Office of Industrial Relations, Department of Education provided a response. Mr Bick confirmed WHSQ does not have any jurisdiction to investigate a mid-air parachuting accident.[155] The responsibility falls to CASA. As explained above, CASA delegates the responsibility for investigating any such accidents to the relevant organisation. In this case the APF.

Autopsy and Toxicology

149. Dr Paull Botterill, Senior Staff Specialist Forensic Pathologist, carried out all post mortem examinations in relation to Kerri, Peter and Toby. He concluded all died as a result of multiple injuries consistent with a parachuting collision. He formed the opinion the injuries sustained were more in keeping with a mid-air collision rather than during ground landing.[156]

150. Dr Botterill noted that all suffered significant head and neck injuries.[157];[158];[159]

151. Mr Tibbitts initially concluded impact between Toby and the tandem pair occurred

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[153] Ex C5, 46
[154] Ex C36
[155] Ex G3
[156] Ex A1, p7; Ex A2, p7; Ex A3, p7
[157] Ex A1, p7
[158] Ex A2, p7
[159] Ex A3, p7

at a 45 degree angle. He based this on what he thought the forensic pathologist had concluded. He acknowledged that was before the autopsy, and the pathologist was not 100% clear what had occurred. Mr Tibbitts says he then spoke with a QPS officer who filled him in on the details.[160]

152. Mr McCooey formed the opinion there was a 45 degree angle of impact based on the injuries he observed at the scene and the investigations he undertook.[161] He clarified though that the 45 degree angle was not the angle Toby was moving prior to impact, but the angle of the impact. He formed the opinion Toby was travelling vertically and centre of the middle of the canopy of Peter and Kerri, immediately prior to impact.[162]

153. Dr Botterill was provided a copy of the APF report and asked to comment, in particular, concerning the mechanism of death and on the proposition that impact occurred at a 45 degree angle. He stated:

> *"As previously discussed, whilst I am unable on the basis of the autopsy to confirm (or exclude) the APF's opinion that the collision was at '45 degrees', I am in agreement about the relative positions of the 3 decendents, that the injuries of significance were sustained in a body front-to-body front mid-air collision, and that this was the mechanism of injury that resulted in each of the deaths. My stated opinion as the causes of death is unchanged".*[163]

154. The toxicology results concerning Peter Dawson detected Nordiazepam 0.02 mg/kg in the femoral blood sample.[164] The toxicology results concerning Toby Turner detected the inactive metabolite of tetrahydrocanabinol, the active ingredient of cannabis (cannabinoids).[165]

155. A Forensic Medical Officer and Toxicology experts considered the toxicology results including whether there was any causal link between the results and the actions of the deceased in the circumstances leading up to the deaths of the deceased.

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[160] T1-40, 8
[161] T4-61, 36
[162] T4-66, 3
[163] Ex A7
[164] Ex A2.1, p1
[165] Ex A3.1, p1

156. Dr Leslie Griffiths, a forensic medical officer from the Queensland Clinical Forensic Medicine Unit, concluded:

Peter Dawson

"The presence of nordiazepam without a detectable level of the parent drug, serves merely as a marker of previous exposure to the parent 'valium', likely to have been at least two days before death.

The concentration of nordiazepam was so small as to be pharmacologically insignificant, and no adverse effects would be expected at the time of the fatal incident".[166]

Toby Turner

"TURNER had only a trace level of cannabis-derived THC in his blood at post mortem which was actually below the limit of reliable and quantifiable detection by the Forensic Science Laboratory of the John Tonge Centre in Brisbane.

Its presence is conclusive proof that at some time prior to the fatal skydiving incident on the 13th October 2017, TURNER had been exposed to cannabis.

Passive exposure cannot be entirely excluded as a possible explanation for its presence.

Due to the very long period for active THC to be eliminated from the body because of its tendency to be stored in body fat, there is no method of determining when TURNER had been exposed to the parent substance cannabis.

For TURNER to have been impaired at any time during the preceding flight and subsequent descent, he would have required a level of THC in his blood at the time which would have exceeded the amount actually present by at least a factor of five.

That would mean that TURNER would have had to have smoked cannabis within about an hour of his death.

TURNER would therefore have appeared visibly intoxicated to an untrained observer during a period which included the pre-flight preparation and the flight

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[166] ExA5, p3

itself.

The level of THC detected would not have any role to play in the incident currently under investigation".[167]

157. Dr Olaf Drummer, an independent forensic pharmacologist and toxicologist from the Victorian Institute of Forensic Medicine has considered the toxicology results of Peter Dawson and Toby Turner. He concluded:

"*In Dawson deceased given the very low concentration of nordiazepam, the metabolite of diazepam, it is most unlikely that any discernible effect of the drug would be present at the time of the accident.*

Similarly, in Turner there was no THC present at the time of death, only a very small amount of the metabolite (carboxy THC). While this would suggest some prior use, or some other form of exposure prior to death, it is most unlikely that the drug would have any discernible psychomotor or cognitive effect at the time of the accident.

In conclusion, I am of the opinion that neither Dawson nor Turner would have been adversely affected by the drug (as metabolites) detected in their blood".[168]

158. Clause 6.2.3 of the APF Operational Regulations deals with Alcohol, Drugs or Fatigue. At subparagraph (c) it states "*An individual is deemed to be impaired by alcohol or drugs if there is any presence of alcohol or drugs in their system, or they act in a manner that raised reasonable suspicion of alcohol or drug use as assessed by the DZSO or STO*".

159. The evidence does not support that either Toby or Peter were impaired by the drugs found in their system at autopsy or that the drugs had any causal link to the accident. Further, there was no mechanism in place to test either Toby or Peter immediately prior to the jump. As a result, the issue of drug use and drug testing was not explored at inquest.

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[167] ExA4.1. p6
[168] Ex A6, p3

CORONIAL ISSUES

Standard of Proof

160. The standard of proof to be applied at coronial inquests is well set out by Freckleton and Ranson in their text 'Death Investigation and the Coroner's Inquest'.[169]

> *Coroners can only make findings on the basis of proof of the relevant facts on the balance of probabilities.*
>
> *However, where the matters that are subject of the coroner's findings are very serious or approximate criminal conduct, the finding will be on the upper end of the balance of probabilities, in accordance with the scale postulated in Briginshaw v Briginshaw3. As Latham CJ put it:*
>
> *There is no mathematical scale according to which degrees of certainty of intellectual conviction can be computed or valued. But there are differences in degree of certainty, which are real, and which can be intelligently stated, although it is impossible to draw precise lines, as upon a diagram, and to assign each case to a particular subdivision of certainty. No court should act upon mere suspicion, surmise or guesswork in any case. In a civil case, fair inference may justify a finding upon the basis of preponderance of probability. The standard of proof required by a cautious and responsible tribunal will naturally vary in accordance with the seriousness or importance of the issue.4*
>
> *Justice Dixon framed the test similarly:*
>
> *The truth is that, when the law requires the proof of any fact, the tribunal must feel an actual persuasion of its occurrence or existence before it can be found….*
>
> *The seriousness of an allegation made, the inherent unlikelihood of an occurrence of a given description, or the gravity of the consequences flowing from a particular finding are considerations which must affect the answer to the question whether the issue has been proved to the reasonable satisfaction of the tribunal. In such matters 'reasonable satisfaction' should not be produced by inexact proofs, indefinite testimony, or indirect inferences.*
>
> *Coroners should be mindful of a deleterious effect that a finding of contribution to cause of death may have on a person's character, reputation and employment prospects, as well as the gravity of such a finding. While allegations of matters such as assault need to be proved only on the balance of probabilities before a coroner, their criminal nature is one of the factors to be taken into account in determining whether the*

[169] Freckelton, I and Ranson, D – Death Investigation and the Coroner's Inquest. Page 554

> *requisite level of 'comfortable satisfaction' exists as to the matters alleged. 'Because of the gravity of the allegation, proof of the criminal act must be "clear, cogent and exact and when considering such proof, weight must be given to the presumption of innocence" The result is that the distinction is between the criminal and civil standards in such matters may not be of major consequence.*

The Inquest into the deaths of Kerri Anne Pike; Peter Dawson and Tobias Turner investigated the circumstances surrounding the death of each and including whether any person contributed to the deaths. The serious nature of such inquiry requires a standard of proof at the upper end of the balance of probabilities.

A coroner must not include in any findings a statement that person is guilty of an offence (i.e. a criminal act), or civilly liable for something.

I therefore heed that proof of any allegations approximating criminal conduct must be clear, cogent and exact and when considering such proof, weight must be given to the presumption of innocence and that the result is that the distinction is between the criminal and civil standards in such matters may not be of major consequence.

Coronial Issue 1: Section 45 requirements

The information required by s45(2) of the Coroners Act 2003 ('the Act'), namely when, where and how Kerri Anne Pike; Peter Michael Dawson and Tobias John Turner died, and what caused their deaths.

Findings required by s. 45

Identity of the deceased –	Kerri Anne Pike; Peter Michael Dawson; and Tobias John Turner
How they died –	On 13 October 2017, at or around 1515hrs, tandem pair Peter Dawson and Kerri Pike exited a Skydive Cairns plane operating from the Mission Beach Drop Zone. Peter Dawson was the Tandem Instructor, and Kerri Pike the student and fee paying customer. Kerri Pike was strapped to the front of Peter Dawson. Shortly thereafter Tobias Turner undertaking a free of charge solo sports jump exited the plane. Tobias Turner engaged in relative work with the pair by shaking hands with Kerri Pike following which Tobias Turner descended and whilst in a back to earth orientation or partial back to earth orientation accidently and inadvertently became positioned directly below the tandem pair during

which time his main parachute deployed in an out of sequence event due to the affect of the relative air on the rig because the main canopy was too small for the container resulting in a lack of tension on the closing loop, causing the opening of the pin cover, followed by the bridle being extracted, the pin pulled and the main bag leaving the container in turn extracting the pilot chute followed by the canopy. The descending tandem pair collided with Tobias Turner and all three persons died instantly as a result of non-survivable multiple injuries sustained.

Place of death –	The place of death of the deceased persons was in the air space above the Drop Zone located at Donkin Lane, Mission Beach, Queensland.
Date of deaths–	13 October 2017
Cause of their deaths –	The cause of the deaths was: multiple physical injuries consistent with a parachuting mid-air collision.

Coronial Issue 2: Circumstances of Death

The circumstances surrounding the deaths of Kerri Pike; Peter Dawson and Tobias Turner including, whether there was a mid-air collision between tandem skydivers Peter Dawson and Kerri Pike, and the solo skydiver Tobias Turner and if so, to determine the cause of the collision.

161. Mr Tibbitts advised the AAD data, in the context of the GoPro footage demonstrates there was likely a mid-air collision very shortly after the GoPro footage shut down at approximately 47 seconds.[170] He estimates both Peter Dawson and Toby Turner were travelling at about 220 kilometers per hour in free fall prior to the accident occurring.[171] Further, he advised the data from the Alti-2 confirmed that something very significant happened at altitude.[172] Mr Tibbitts advised when piecing all of the evidence together he reached the conclusion that there was a mid-air impact between the parachutists.[173]

162. Taking into account the expert opinions of Mr Tibbitts, Mr McCooey, Mr Fickling

[170] T1-44, 35
[171] T1-45, 29
[172] T1-46, 39
[173] T1-46, 41

and Mr Rapson, coupled with the evidence of Dr Botterill, the Forensic Pathologist, I **find** there was a mid-air collision between the skydivers and they died instantly as a result of the injuries sustained by each of them.

163. The circumstances surrounding the deaths of the deceased persons have been broadly addressed above.

164. It was unanimously acknowledged by all of those witnesses who knew Toby that he was professional and safety conscious with respect to parachuting.[174] The impression Michael Tibbitts had regarding Toby's professionalism was that "*There was – there was never a bad word said about Toby. He was deemed to be of the highest qualified* (sic) *and the most – one of the most respected jumpers down there. In fact, he had a – he had the highest rating available*".[175]

Position of Toby Turner at the time of Deployment of the Parachute

165. In his report, Mr Tibbitts formed the opinion Toby was flying back to earth or in a partial back to earth orientation when his main parachute deployed. Mr Tibbitts explained it might have been that Toby was on his back below Peter and Kerri to watch their deployment or that on transitioning onto his back he intended to track away from Peter and Kerri in order to deploy his parachute.[176]

166. Mr Tibbitts explained there are many variables as to the impact the opening a parachute may have on the position of a parachutist. He suggests it is generally a gentle pull and that the parachutist is not violently snapped in any particular direction.[177] In this case, Toby would still have been descending as the parachute was unfurling but he would have been going in an upward direction relative to the tandem pair.[178]

167. In explaining why he reached the conclusion that Toby was directly below Peter Dawson and Kerri Pike, Mr Tibbitts stated, "*So based on their injuries and the damage to the main parachute, it suggests that they – that they contacted, with*

[174] For example: T5-7, 19 (Mr Fickling)
[175] T1-26, 20
[176] T1-40, 27
[177] T1-50, 25
[178] T1-50, 40

a parachute between them, directly on top of each other. Which would suggest that he was – wasn't anywhere other than directly below them".[179] While he acknowledged it was possible that Toby was off to one side and as a result of the opening of his parachute it brought him back to the centre, he would not have thought it was the most likely scenario.[180] It is not how parachutes tend to deploy, it may occur in the later stages of opening when there is some forward movement.[181]

168. Further, from Mr Tibbitts careful consideration of the GoPro footage and in distilling down four enhanced screen shots from the video footage[182], he formed the opinion that Toby was directly below Peter Dawson and Kerri Pike when Toby's main parachute deployed.

169. Mr Van Neuren advised in a belly to earth position, the parachute is behind the person and a parachutist can get away with more looseness in their pack. When a parachutist is exposed to relative winds, that is, in a sit to fly position or in a back to earth position, then the rig is fully exposed to the wind and so if there is any looseness it can deploy the parachute.[183] The same applies in a vertical position.[184]

170. Mr Van Neuren agreed it was not possible to determine what position Toby was in immediately prior to the deployment of his parachute. However, he stated, "*Well, certainly it would have been more likely for a premature deployment in – in a back to Earth or vertical position*".[185]

171. After hearing all of the evidence at the inquest Mr McCooey stood by his conclusion that Toby Turner was directly under Peter Dawson and Kerri Pike prior to his main chute deploying. He stated, "*Yep. I'm suggesting that Toby's body was virtually was virtually dead centre of the middle of the canopy for that damage to be there*".[186]

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[179] T1-51, 4
[180] T1-51, 10
[181] T1-51, 15
[182] Ex B27.1
[183] T4-8, 24
[184] T4-8, 38
[185] T4-17, 26
[186] T4-66, 3

172. The weight of evidence on the balance of probabilities supports a finding that Toby was located directly below Peter Dawson and Kerri Pike immediately prior to impact.

173. Mr Fickling confirmed (as did other witnesses) that it was industry standard that another parachutist should not fly directly under another parachutist.[187] Further, he would expect Toby to be aware of that requirement.[188]

174. That raised the question as to whether the position of Toby under Peter Dawson and Kerri Pike was intentional or unintentional.

175. Mr Tibbitts explained it was possible that in Toby positioning himself after dropping vertically below Peter and Kerri that he found himself directly underneath them at the particular time the canopy released.[189] He stated, "*I would be very surprised if someone with his skill and experience, and, from what I understand about him as a jumper, to have intentionally done that*".[190]

176. It was posed to Mr Tibbitts that Toby's position under Peter Dawson was the result of an intentional part of the skylarking and general camaraderie that was going on. Mr Tibbitts responded, "*There's a difference between, sort of, having fun with your friends and doing something that can put your friends at risk. And I – I don't think you can necessarily draw one from the other*".[191]

177. Mr McCooey is of the view based on the timing of events it is more probable than not that Toby changed to a vertical position to ascend quickly below Peter and Kerri prior to his parachute deploying.[192] Mr McCooey thought he could then have gone on to his back and as he went onto his back inadvertently slid underneath the tandem.[193] He stated, "*I'm saying is that vertical movement could have in fact inadvertently pushed Toby underneath the tandem pair*".[194] In response to being asked whether he is able to say whether it was more probable than not that it was inadvertent, he stated, "*I can simply on the basis that, you know, it is just*

[187] T5-24, 17
[188] T5-25, 21
[189] T1-109, 44
[190] T1-110, 13
[191] T1-110, 25
[192] T4-62, 18
[193] T4-63, 37
[194] T4-64, 0

known by everybody we don't go underneath. And – I couldn't rule it out, but I just couldn't imagine that – that anyone with even half Toby's experience would have done that intentionally".[195]

178. Further, Mr McCooey formed the opinion the abrasions on Toby and the damage to his helmet are consistent with a parachute opening around the person rather than someone flying belly to earth. He stated, "*So in other words, he's not in the normal, belly to earth position, and those lines did then come up past – past his face, which would then create that damage, or those – those marks*".[196]

179. Mr McCooey stated, "*It was the perfect storm I think is the best way to explain that. I mean, I suggest that he may have only been in that exact direct path for perhaps a split second as he slid past at exactly the time that that canopy deployed*".[197]

180. Mr Lawson confirmed it was possible that in manoevering into position that a parachutist can find themselves directly underneath another parachutists.[198] He said it had happened to him once or twice but that he moved away straight away.[199]

181. Mr Davies never found himself underneath a tandem but if he did he would certainly get out of there quickly as it is not a safe place to be.[200]

182. Mr McGrath would not have been surprised if Toby was flying underneath Peter and Kerri. He would have just been having fun with them and probably giving Kerri some visuals to look at.[201] However, he agreed with the suggestion of Mr Dickson, that is, that it was possible that Toby could have been below and to the side of the tandem pair, because when you deploy, you can still be moving cross the sky.[202]

183. Mr Lewis thought it possible Toby had unintentionally ended up under Peter

[195] T4-64, 17
[196] T4-44, 27
[197] T4-66, 47
[198] T2-72 25
[199] T2-72, 34
[200] T2-92, 7
[201] T3-27, 43
[202] T3-38, 26

Dawson and Kerri Pike, this particularly if he remained in the same orientation as in the GoPro footage and went vertically down but moved a bit in or out.[203] Whether in maneuvering to a sitting position or back to earth he found himself unintentionally under the tandem diver, he said it was hard to speculate.[204]

184. Mr Van Neuren advised that during an out of sequence deployment (this is addressed below) there is a brutal opening, which is a bit firmer.[205] He accepts it is possible that Toby was slightly sideways and the chute hit his head or part of his body as it opened. The deployment would have moved Toby upwards.[206] He found it debatable that Toby would have moved to the side as the whole opening would have taken a matter of a second.[207]

185. Mr Van Neuren accepted it is possible that when Toby was below the tandem he started to make a movement that resulted in zooming, which could have resulted in him being under the tandem.[208] Zooming is defined as "*an unintentional and sudden horizontal movement. At worst, zooming can be like a very steep, fast track forwards or backwards. It may occur if your body teeters from the knife-edge vertical position momentarily. This means there is also a risk of collision with people who may be a reasonable distance horizontally from you*".[209]

186. In response to the proposition that Toby momentarily found himself under Peter and Kerri, Mr Fickling stated, "…*Knowing the professionalism and the safety-conscious person that was Toby and having – that's an opinion formed from working with – with Toby. I would say that he - he wouldn't have an intention on flying underneath*".[210]

187. The weight of evidence on the balance of probabilities supports a **finding** that Toby's positioning directly below the tandem pair was accidental and inadvertent.

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[203] T3-115, 23
[204] T3-115, 21
[205] T4-18, 44
[206] T4-20, 0
[207] T4-20, 4
[208] T4-31, 5
[209] T4-30, 37
[210] Ex C36, p8
t5-24, 30

Coronial Issue 3: Deployment of parachutes

To determine if the main, reserve and drogue parachutes ('the parachutes') used by Kerri Pike and Peter Dawson, and Tobias Turner on 13 October 2017 deployed appropriately.

188. It is clear from the evidence that the drogue and the reserve parachute of Kerri Pike and Peter Dawson deployed appropriately. The reserve parachute being triggered by the AAD when they reached the requisite height. The main parachute was not deployed. This likely because Peter Dawson was unable to deploy the parachute due to his fatal injuries. The inspection of the tandem equipment did not reveal any concerns or issues. The equipment was found to be in good order.

189. I **find** that the reserve parachute of tandem master Peter Dawson deployed appropriately on the activation of the AAD.

190. Toby was using his own personal equipment to undertake a sport jump, which was classified by Skydive Cairns as a Free of Charge ('FOC') jump. Skydive Australia allows tandem instructors to undertake a FOC if there is capacity on the plane.

191. Toby had been contracted to Skydive Cairns since 16 December 2016.[211] Mr Tibbitts confirmed that with Toby's level of experience it was up to him to decide what equipment was appropriate for him to use for his own personal use.[212]

192. Mr Lewis, the Chief Instructor of Skydive Cairns reviewed the master log for the Mission Beach Drop Zone. It records all jumps regardless of the type of jump, which are carried out at the Drop Zone.[213] In reviewing the log he was able to establish that prior to the accident, Toby had undertaken solo jumps on 9, 10 and 13 June 2017.[214] The master log does not record the equipment Toby was using for those jumps.[215] There is no evidence to suggest he would have been using

[211] Ex B4.16.4, p1
[212] T1-37, 2
[213] T3-107, 45 and B4.16.4
[214] T3-108, 2
[215] T3-108, 30

any other equipment on those jumps other than the equipment he used on the day of the accident.

193. The data from Toby's Viso II Electronic Skydiving Device (Altimeter/ Speed Meter/Jump Counter) could be accessed at the inquest. Mr McCooey was asked to analyse the data and provide a report. The memory was accessed via the screen. The date was correct. The time was 18 minutes ahead of the time when the device was accessed. The device recorded the last 14 jump days. The first jump day being on 24 September 2017 and the last, in which seven jumps were recorded, was on the day of the accident.[216]

194. From the data, Mr McCooey was able to conclude that it was more probable than not, all jumps (except the last jump) were tandem jumps. He stated, "*the Deployment Altitude and Max Canopy Speed are the most useful pieces of data that assist me in forming this opinion*".

195. There can be no certainty as to the last time Toby used his solo sport equipment. However, on the evidence before me I find that it is probable that the last solo sport jump undertaken by Toby at the Cairns Skydive Drop Zone was on 13 June 2017 and that he most likely would have used his solo sport rig to complete that jump.

196. The evidence supports a conclusion that on the day of the accident Toby was using his solo sport rig and that there was a premature deployment of Toby's reserve and main parachute.

197. Then inquest devoted much time attempting to determine the likely order of events with respect to deployment and why there was a premature deployment.

Likely Order of Events

198. Mr Tibbitts confirmed on the basis Toby jumped 1.2 seconds after Peter and Kerri deployed from the plane, there was a plan in regards to the parachutists coming together to undertake Relative Work.[217] I accept the submission of Counsel Assisting that when Peter Dawson looked back towards Toby, as Toby exited

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[216] Ex G9, 2
[217] T1-28, 12

the plane, it was indicative that they were jumping together and had planned to do so. It seems this is contrary to the indication by Toby to the pilot prior to take off that he would 'deploy high at 9000 feet' and may be suggestive that the plan for relative work only crystallised on board the plane.

199. I accept it is more probable than not that Toby descended vertically below Peter Dawson and Kerri Pike after shaking hands (relative work) and that he was likely then in a sit to earth or back to earth position. This would have changed the dynamics on his rig.[218] If he was on his back then the rig was being hit directly by the wind and it was being put through different forces and was subject to different elements.[219] I refer to the evidence of Mr Van Neuren at paragraph 57 above to this effect.

200. Mr Tibbitts is of the opinion there was an out of sequence deployment with respect to Toby's main parachute.[220] That is, the container opened, then the bag, then the pilot chute.

201. Mr Van Neuren described the tear of Toby's main chute closest to the attachment as being caused when the canopy left the deployment bag. This because of the fibres in the container being consistent with the top skin of the canopy. He says this suggests the parachute got caught in between the webbing in the bag.[221] He thought that might have been due to a non-sequential opening.[222]

202. Mr Tibbitts carefully considered the GoPro footage. The four screen shots he relied on in forming his opinion were played in court at inquest in reverse order. Mr Tibbitts explained the image in Peter Dawson's sunglasses was red across the middle and white edges of Toby's main canopy in the early stages of deployment.[223] Prior to that, there was an image, which was possibly Toby himself or his deployment bag. Mr Tibbitts acknowledged it was very hard to ascertain any kind of real detail.[224] Each frame would have been 0.4 per second.[225] That is, the captured scene all occurred just under two seconds.

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[218] T3-114,
[219] T3-115, 30
[220] T1-48, 3
[221] T4-6, 23
[222] T4-7, 29
[223] T1-62, 40
[224] T1-64, 16
[225] T1-64, 10

203. Mr McCooey undertook his own examination of the GoPro footage and printed out and enlarged the frames onto high quality photographic paper. He confirmed in his opinion he is reasonably satisfied the image in Peter Dawson's sunglasses was of Toby's main canopy but was unsure if the white dot image immediately prior to that was Toby.[226] He could not provide any other explanation for the image in Peter Dawson's sunglasses.[227] He confirmed the opening of the parachute would occur in one to two seconds.

204. Mr McCooey was asked if the white dot could have been the reserve opening. He stated:

"*I might be able to answer it better by saying the damage to the main parachute – the red main parachute – is more convincing to make me think that the white dot is another part of the componentry rather than it being the reserve. Now, I wouldn't rule out any chance of that, but it's very unlikely, because the damage to the main would show that the initial impact was there. There wouldn't be time then for much else to – no other logical and plausible explanation within the time available for that to be anything except the main parachute*".

205. Mr Tibbitts described the damage to Toby's parachute he observed at the scene and a day later at the QPS station. He confirmed there was damage to the outer shell and underneath the outer shell. The damage was mainly concentrated around the centre cells, in the middle.[228]

206. With respect to the sequence of opening, Mr McCooey formed the opinion it was more probable than not that:

"*The main parachute came out, and the tandem pair went through that main parachute. As they went through, they brushed past the reserve handle of – of Toby Turner, which then in effect pulled that handle, and the reserve came out after that – so in that order – so main, then reserve. And bear in mind that whole process all could have happened in, you know, one second or perhaps a little more than that. But certainly in a very short period of time*".[229]

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[226] T4-57, 2
[227] T4-57, 27
[228] T1-47, 11
[229] T4-58, 17

207. Mrs Turner suggested to a number of witnesses that Toby's reserve parachute opened prior to his main parachute.[230] This based on the witness accounts of:

a) Adam Hartley who recalled seeing a white reserve open up and then saw some red and white materials snaking out which eventually unfurled behind[231] ;

b) Richard Frank who could see Toby's reserve out and then saw his main parachute opening as well dragging along behind him[232]; and

c) Derec Davies who noticed above a white parachute opening, he assumed it was Toby's. A minute later he noticed Toby's second parachute opening. He realised it was red in colour and not one they utilise for tandems[233].

208. Mr Davies clarified his position in oral evidence. He said, what was in his original statement was how he was trying to perceive what he saw but that now after reviewing the APF report, he can make a lot more sense of it, knowing what he now knows.[234] While he saw the white parachute, he thinks it is very possible the main was obscured.[235] Mr Hartley and Mr Frank were not called to give evidence at the inquest.

209. Mr Tibbitts did not think the reserve opening first was likely based on the physical evidence of the damage to the main parachute.[236]

210. Mrs Turner suggested it possible that Toby snagged his equipment on the way out of the aircraft and that that was the cause of the premature parachute deployment.[237]

211. Mr Tibbitts says while it is possible Toby snagged his equipment, on exiting the plane, it is unlikely as on the GoPro footage (taken after Toby exited the plane)

[230] Sergeant Ezard (T1-28, 41);
[231] Ex B4.11, p3
[232] Ex B4.6, p7
[233] Ex B4.1, p3
[234] T2-86, 34
[235] T2-87, 20
[236] T1-65. 7
[237] T1-29, 331

you can quite clearly see that the reserve pilot chute is seated where it should be and the main container flaps appear to have tension and are closed.[238] When cross-examined by Mrs Turner, Mr Tibbitts refused to accept that the reserve parachute opened prior to Toby's main parachute.[239]

212. Mr Van Neuren is of the opinion that Toby's reserve handle dislodged at the time of his impact with Peter Dawson and Kerri Pike, and the dislodgment of the handle caused the reserve to deploy. Alternatively, that Toby pulled the reserve handle himself.[240] He said the time between the reserve handle being pulled and deployment of the reserve chute is seconds, two seconds normally.[241]

213. Mr Van Neuren did not think it likely the reserve deployed causing the premature deployment. If the handle had been dislodged, Toby would not have flown anywhere near the tandem and the reserve would have opened. Further, this is not consistent with there being no damage to the reserve parachute.

214. The weight of evidence on the balance of probabilities supports a **finding** that Toby's main parachute prematurely deployed at the precise moment he was directly below the tandem pair resulting in a mid-air collision.

215. I **find** that Toby's reserve parachute opened as a result of the collision and was probably deployed as a result of the reserve handle being dislodged when the tandem pair came through.

Compatibility of Main Chute and Container

216. The inquest explored whether Toby's main parachute was too small for the container, and therefore a lack of sufficient tension in his container, the long closing loop and if the mismatch of the main parachute and container ratio caused the premature out of sequence deployment.

217. Evidence was provided at the inquest that downsizing of a main parachute to a small faster model by a parachutist as they gain more experience was not unusual. Mr Lewis said parachutists are updating and changing canopies

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[238] T1-66, 5
[239] T1-68, 37
[240] T4-29, 22
[241] T4-29, 44

reasonably frequently. The downsize (or change) must be approved by the DZSO.[242]

218. There was evidence at the inquest that there are numerous different brands of both chutes and containers. With respect to compatibility Mr Lewis stated:

"…with everything, we're chasing to make sure that we try to make sure everybody is safe, but there comes a – probably comes a point where how much scrutiny to the person in the sport that we're looking at, you know, [indistinct] a few hundred jumps, we would pick every little bit over of anything that they're doing than somebody who has got 10,000 skydives and has been an instructor for less – for a long time. We would find less need to scrutinise every little thing that they did. The assumption that they – you know, they understand all of the ins and outs and the risks associated, you know, rightly or wrongly".[243]

219. Toby was using a Racer container. The manufacturer's recommendations stated:

"*Many reserve and main canopies will fit well within your Racer. But some won't. Results of packing the wrong-sized canopy into your Racer range from difficulty in packing to a likelihood either of premature pack opening or total pack closure, depending on whether the parachute canopy is too small or too big*[244]*…*

Guidelines for component interchangeability – but we've made the decision even easier. The Parachute Industry Association and the Jump Shack have each published a list of canopy volumes. They tell you the cubic inches required for your container and which size Racer you should choose for a specific canopy. If you can't find your canopy listed, call the canopy manufacturer or Jump Shack to find your canopy's volume. Don't guess. It's unnecessary and dangerous".[245]

220. Toby was using a Velocity 90 parachute. The Manufacture guidelines state:

"*It is very important to ensure the bag is the right size for the canopy and the right size and shape for the container it is being used in".*[246]

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[242] T1-81, 10
[243] T3-109, 36
[244] ExC11, 5
[245] ExC11, 5
[246] ExC12, 5

221. It was implied Toby Turner had the Racer container document in his possession.[247] That inference may not be correct as Mr McCooey confirmed he obtained the manual from the manufacturer.[248]

222. Mr McCooey confirmed with the manufacturer of Toby's container as to the pack volume it could contain. In evidence, Mr McCooey advised due to its cross bracing, the Velocity 90 packed up more like a 107 which was still outside the manufacturer's recommendations.[249] That is, it was undersized for the container Toby was using, as the minimum volume for Toby's container was 135.[250]

223. There was only anecdotal evidence that Toby had been using the Velocity 90 for approximately two years prior to the accident. There was no evidence as to how he came to purchase the equipment, whether he purchased it new or second hand and whether he had in his possession or consulted the manufacturer recommendations. Nobody recalled Toby talking about purchasing a new parachute. There was no evidence of Toby obtaining approval from a DZSO to downsize his canopy.

224. Mr Davies advised everybody who jumps with a skydiving rig is definitely aware of the fact that skydiving rigs are designed for certain size mains and that there is only so much leeway that should be tolerated. [251] The smaller a parachute gets there is always going to be room for it, and to determine whether it is appropriate or not, it is necessary to consult the manufacturer recommendations. If he were unclear he would contact the manufacturer and ask them what they would recommend.[252]

225. Mr McGrath said it is a pretty obvious thing when you have small pack volume because the container is loose.[253] It is not safe. He expected Toby would know when the pack volume was too small for the container.[254]

226. Various persons were asked to handle Toby's rig either as part of the

[247] T2-39, 21
[248] T4-45, 21
[249] T4-46, 14
[250] T4-46, 23
[251] T2-93, 39
[252] T2-94, 6
[253] T3-22, 15
[254] T3-22, 28

investigation or during the inquest and provide their opinion.

227. Mr McGrath was not aware of the pack volume issue with Toby's main parachute prior to giving evidence. He was asked to examine Toby's rig, which included the packed reserve and main parachute, in court. He formed the opinion the container was a bit slack and the grommets did not line up as closely as they could.[255] He thought he would shorten the closing loop to pull it all closer together.[256]

228. Mr Newman is a very experienced Rigger. He had been retained by the QPS to repack Toby's parachute for the purpose of the coronial inquest. He advised there were a number of issues to take into consideration when assessing Toby's pack, they include:

  a) A parachute can be packed a number of different ways;
  b) The parachute was damaged which makes it harder to pack as it does not fold up the same way;
  c) There can be variations in the way the system will close based on how somebody handles their equipment;
  d) The closing loop was not too loose; and
  e) The tension on the closing pin does not give a clear indication that the canopy is the correct size.[257]

229. Mr Lewis agreed there could be a bit of variance in the pack volume depending on the way in which the parachute was packed.[258] Mr Van Neuren accepted parachutists have different packing techniques and that there can be some difference in the tension.[259] However, was of the opinion in this case, there was not any way the parachute could have been packed that would have made it safe.[260]

230. Mr Newman said he would not have recommended Toby's size canopy in his container.[261] The volume of the canopy was unsuitable for the container.[262] He

[255] T3-34, 4
[256] T3-34, 17
[257] T3-64, 15
[258] T3-110, 39
[259] T4-32, 25
[260] T4-32, 27
[261] T3-65, 34
[262] T3-66, 4

said this was because the container was soft and while there was sufficient tension on the pin when it's closed, there was surplus room around it, within the container. It was not firm or rigid. He could push on it, and the container would move fairly easily. This impacts on the tension on the pouch, that is, at the bottom of the container where the pilot chute is stowed.[263] He thought there was a little bit of misconception that just the tension on the closing pin is enough to determine compatibility.[264]

231. Mr Newman advised that as the packed parachute had sat for at least a month prior to the inquest it is possible that the closing loop would have less tension, this because air passes out of the system.[265]

232. With respect to why Toby was using the equipment, he stated:

"…*Toby made a choice. He's made a choice, based on the fact that he could clo- and this is my belief –that he made a choice to leaving that – because he closed his system up, and it had suff- enough tension on his pin, then I would be safe. Toby didn't take into account the fact that the tension on the bottom of his container is completely dictated by the size of the parachute that is inside. And that determines how much tension is on his pilot chute pouch. And, in normal belly-to-earth flying, that is fine. It would not be affected. But, in a different body orientation, then that changes the aerodynamics, and then his pilot chute could be affected – or his equipment, if he was at high speed – just the force of the air on his equipment change the shape of the equipment enough to cause a premature opening".*[266]

233. Mr Lewis was asked to inspect Toby's equipment with respect to the closing pin and tension on the container during the inquest. He said:

"*There is a bit of tension on the pin. The flaps do have a bit of tension inside them. Um, it's not drastically loose and I wouldn't – I wouldn't look at this rig and think it's – it's just impossible. I would suggest, if you wanted to tighten it, you would possibly shorten the closing loop and – and see how much tighter you could get it, but when – when we're talking about softness of the canopy in there, um, I would agree – agree that that's termination. It's – it is quite – quite*

[263] T3-72, 0
[264] T3-81, 36
[265] T3-72, 41
[266] T3-74, 44

soft, which probably is – come from the pack volume of the canopy inside that container, yes, but I could – I could – I could see where Toby might've thought that this was okay.[267]*…*
He may well have, um, packed it – um, put the put the canopy in the container, and packed it up and determined himself that the – he felt that that was okay and – and may have continued to believe, that, because he –it's my understanding he jumped the gear for a number of years with – with that setup without any – and so it's – if – if – if it was an error in judgment, it was made over his experience that it was okay and – and I – I have no doubt he believed that. Um, I don't doubt that at all. Um, um, I – I don't know whether he looked up – up the manufacturer's recommendations …".[268]

234. Mr Van Neuren was part of the APF investigation team and completed the inspection of Toby's equipment as part of the investigation. He has been doing rigging work since 2005 and has completed around 18,000 jumps.[269] When he repacked Toby's main parachute as part of the investigation, the reserve was not in place.[270] He said this was because he did not have the reserve free-bag sheet (deployment bag).[271] He did not think that the reserve takes up significant space and that the main container should be able to hold tension without the reserve in place.[272]

235. Mr Van Neuren conceded it was possible there was a little bit more room in the bag if the reserve was not in place.[273]

236. Mr Van Neuren did not think the damage to the parachute would have impacted the pack volume because despite the damage all of the parachute remained available.[274] On his viewing of the parachute there were no contaminants, which would have altered the pack volume.[275]

237. Mr Van Neuren was asked to again inspect the pack during the inquest. He

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[267] T3-119, 28
[268] T3-125, 19
[269] T4-3, 33
[270] T4-11, 30
[271] T4-11, 34
[272] T4-11, 38
[273] T4-11, 45
[274] T4-12, 37
[275] T4-12, 0

confirmed the container was loose but disagreed with Mr Newman that there was enough tension on the closing loop.[276] He was asked to open the container and to then reclose it. He confirmed he did not feel any difference from when he originally inspected the equipment.[277] He confirmed in his opinion the closing loop was too long at 15.2 centimetres and that it was approximately 3.5 centimetres too long.[278]

238. Mr Fickling advised a parachutist could gain a false impression upon closing the flaps that there's enough tension on the pin. [279]However, it is the three elements when combined that make the parachute secure. He described the three elements as:

- checking the pressure on the closing pin;
- checking the pressure on the flaps; and
- checking the pressure on the BOC pouch to ensure that the pilot cannot escape.[280]

239. Mr Fickling agreed with Mr Newman that perhaps what had occurred in this case is that because the tension on the closing pin was providing the tension required, the looseness of the container was not appreciated.[281] He agreed there is a common misconception in the community that if you've got good tension on the closing pin, the significance of the looseness of the bag was not necessarily appreciated.[282]

240. Mr Van Neuren also thought there is a general misconception in the community that if there is enough tension on the closing loop it did not matter if there was looseness in the container. However, with respect to Toby's container and main, he said, he had never seen a system which was so loose before.[283]

241. Mr Fickling had the opportunity to inspect Toby's pack during the inquest. He was of the view the closing loop required shortening and that the rig was not

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[276] T4-13, 45
[277] T4-17, 3
[278] T4-16, 42
[279] T5-21, 32
[280] T5-19, 30
[281] T5-23, 0
[282] T5-23, 10
[283] T4-21, 12

freefly friendly.[284]

242. I **find** that Toby was using a Velocity 90 main parachute and with cross bracing the chute could 'pack up' to a 107. The Racer container was designed for a main parachute with a minimum size of 135. I therefore **find** that Toby's main parachute was undersize for the container and outside the manufacturers recommendations.

243. Whilst divergent to some degree, the weight of evidence supports a view that Toby's closing loop was probably too long. However, when packed up Toby may have considered the loop held sufficient tension. Based on the evidence of experienced riggers and skydivers I am mindful that the closing loop is only one aspect of assessing container volume and compatibility, and that a tactile assessment of the container would have indicated looseness even if the closing pin / loop tension was considered adequate. Amongst other evidence I refer to the APF Fatality Report (exhibit W to the APF Investigation report) with reference to APF Rigger Mr Van Neuren:

> '*packed the main chute into the deployment bag and found the canopy to be far too small for the bag. As the container was closed, the closing loop was found to be several inches too long, creating almost no pressure on the pin. The closing flaps of the container were very loose and consequently so was the bridle cover from the BOC. The pin cover flap was also very loose'*.

244. The Turner family at inquest and in written submissions raised concerns that the inspection by Mr Van Nuren was conducted without Toby's reserve in place and therefore is not an accurate reflection of how they system would have packed up in reality. The evidence at inquest including the visual and tactile inspections of the system by experienced skydiving personnel with the reserve in place further supports the premise that the main chute was too small for the container.

245. The weight of evidence on the balance of probabilities supports the following **findings:**

    i. that Toby's main parachute (a Velocity 90, although packed up to a 107) was incompatible with the deployment bag (a Racer designed for a

[284] T5-52, 0

minimum main chute size 135) and therefore insufficient pack volume;

ii. that Toby was in a back to earth orientation or partial back to earth orientation when his main chute deployed;

iii. whilst in a back to earth orientation the affects of the relative wind on his pack caused the out of sequence premature deployment of Toby's main parachute because the main canopy was too small for the container resulting in a lack of tension on the closing loop, causing the opening of the pin cover, followed by the bridle being extracted, the pin pulled and the main bag leaving the container in turn extracting the pilot chute followed by the canopy

iv. that Toby's reserve parachute deployed after his main parachute.

Toby's Knowledge of Incompatibility

246. The Certificate A Training Guide, which was in place at the time of the accident states, "*Care must be taken to ensure that all parts are compatible. For example, the main must not – must be too big to fit into the container*".[285] This because it is the training for novices. Further it states, "*when you are considering a particular container, go to the manufacturer's website to check their sizing chart to make sure it is suitable for the canopy you need and maybe the one you'll be jumping in another 200 jumps*".[286] Mr McCooey thought these references had been in the material for perhaps 10 years – probably not more. Toby was Certificate F, the highest rating. Toby is likely to have obtained his Certificate A prior to the introduction of these references in the material.

247. In regards to whether there were any other references to compatibility in training for any other certificates through to F, Mr McCooey stated;

"Nothing specific about compatibility, but it's ongoing thing. As I say, when we talk about downsizing and the safety of the downsizing canopy, we would also include that as normal conversation – about, 'Well, is that going to fit into my container'. And it's an ongoing problem for people as to, 'At what stage do I change my container?'".[287]

248. The APF Rigging Advisory Circular referred to in paragraph 121, refers to

[285] Ex C20, p7
[286] ExC20, p42
[287] T4-59, 24

equipment compatibility. It expresses that the responsibility for ensuring compatibility is on whoever packed the relevant parachute, whether it is the main, reserve or both. This RAC is referred to in the packer A training but it was unclear if it was also in the packer B training.[288] Toby was a packer B.

249. Mr McCooey was of the opinion that Toby being in the most senior role, it would be impossible that he would not be aware of the necessary requirements for compatibility.[289]

250. Mr Newman advised a person should know there is a problem with their pack by feeling and looking at it, and that this occurred when they learn to pack their own chute when they have their A licence or moving towards their B licence. He expressed the opinion that Toby should have known that.[290]

251. Mr Van Niekerk thought this accident showed that it is possibly unreasonable to expect the user to wear responsibility for compatibility of their container and parachute.[291]

252. As to why Toby jumped with his rig, Mr McCooey suggested 'normalisation of deviance' might be at play. The definition for that concept being "*the gradual process by which unacceptable become acceptable in the absence of adverse consequences*".[292]

253. Mr McCooey went on to state:

> *"…I think in this case where – you know, I – I can't understand in my mind – you know, I didn't know the people involved in this personally but I dealt with Toby quite a lot. I found him very professional. The reputation where we've – we've had evidence that – it doesn't add up and I really can't see that he'd just say, "That'll do. It's all right". But when I think about that comment and I say and I – I don't have the evidence that he gradually downgraded – down-sized his main but he may have done that and he downgraded it once well within the specifications and it was all good. He downgraded it the next time well within specifications. He might have borrowed someone else's parachute. Then it was*

[288] T4-60, 29
[289] T4-60, 18
[290] T4-26, 9
[291] T2-44, 47
[292] T4-92, 18

getting down right to the bottom end of the specification and, remember, it could have got to a – in this case, you know, this – this - this 9- parachute packed up to a 107. So he – he was possible just gradually thinking that, you know "It's all be good and it does pull up well and I really haven't had any problem with this even looking like it was going to prematurely deploy", or, "I haven't seen any – any risk of that in any way", and it just takes that – that one more step for that to have occurred. So in my mind I'm thinking that as a – a possibility of – of what might have contributed in this case".[293]

254. Toby would have been aware of the potential issues concerning incompatibility of equipment. He was a seasoned industry professional with packing qualifications. I agree with Counsel Assisting's submissions that Toby made an error of judgment regarding the appropriateness of his main parachute for his container. I also accept that Toby may have been satisfied with the tension he felt in the closing loop, despite some looseness in the bag (to use Mr McCooey's words "that it pulled up well"). He had been jumping with the equipment for some time and without problems and he considered it was fit for his purpose.

255. I go further and say that even if he knew he was pushing the limits of the equipment, that he may have felt with his skill and experience, and packing his system sufficiently to have (what he considered) to be 'enough' tension that he could manage the rig as he had done on previous solo sports jumps. Toby must have believed the system was fit for his purpose or he would not have been using it.

Coronial Issue 4: Relevant Standards

To determine what, if any, Australian standards, guidelines or practices ('relevant standards') existed on 13 October 2017:

(i) to regulate commercial tandem skydivers (in harness with a customer) and a solo skydiver jumping in the same group;

(ii) to regulate the jump pattern or configuration of skydivers during freefall;

(iii) to regulate the specifications of parachutes, rigging and packing of the parachutes used by Kerri Pike and Peter Dawson, and Tobias Turner; and

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[293] T4-92, 28

(iv) if the relevant standards applied:

- ***a. did the parachutes, rigging and the packing of the parachutes comply;***
- ***b. did Peter Dawson and Tobias Turner comply with the standards applying to freefall during the jump on 13 October 2017;***
- ***c. did Skydive Cairns comply with respect to the jump of 13 October 2017;***
- ***d. were those standards enforceable, if not, should they have been;***
- ***e. were the standards adequate.***

256. The legal regulation of the industry is over sighted by CASA. This has been addressed above. The APF Operational Regulations cover both commercial tandem skydivers (in harness with a customer) and recreational skydivers.

Relative Work

257. Toby undertook Relative Work (RW) with Peter Dawson and Kerri Pike. In the GoPro video, he is seen shaking Kerri's hand. It appears from the very quick exit from the plane of Toby Turner, and Peter Dawson looking back to watch Toby's exit, that they had planned to undertake RW prior to deploying from the plane. As I alluded to this is potentially at odds with Toby advising the pilot prior to take off he intended to deploy high at 9000 feet.

258. Pursuant to clause 11.2.10(b), a parachutist must not engage in Relative Work with a tandem instructor carrying a tandem parachutist unless he or she has the authorisation of the DZSO.[294] Mr Van Niekerk the DZSO stated Toby did not specifically ask if he could join Peter and Kerri on their jump but said that due to previous conversations in the bus (en route to the airfield) and the fact it was not a regular thing for Toby to do, he made the assumption that he was jumping with them, and that became obvious in the preparations on the ground before they left in the bus.[295]

259. Mr Van Niekerk confirmed he had worked with Toby for nine years and mentored him through becoming an APF instructor, so had jumped with him many times.

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[294] Ex C3, 73

[295] T2-16, 18

He found him to be thoroughly professional and very skillful. He said while the authorisation was implied, had Toby formally sought permission, he would have granted it.[296]

260. Mr Fickling thought it prudent to obtain documentary evidence that informed consent had been obtained from the tandem student prior to RW being undertaken.[297] However, at the time of the accident there was no APF requirement that such consent be obtained.

261. The issue of a parachutist flying under or directly above another parachutist has been addressed above. It was a well understood within the industry (not to do so). It is clearly documented in the Tandem Endorsement Guide that a parachutist should not fly directly under another parachutist. A number of witnesses confirmed this was well known. Further, there was no evidence in this instance that the situation occurred other than momentarily by inadvertence or accident.

262. There was an Operational Regulation concerning Relative Work. In this instance express authorization was not sought by Toby nor given by the DZSO.

263. Information contained within the Tandem Endorsement Guide, confirms the industry practice that a parachutist should not fly directly under another parachutist. Toby's position directly under Peter and Keri has been addressed above.

Responsibility of the DZSO and Chief Inspector for oversighting downsizing / container compatibility

264. There was no documentary evidence provided regarding instruction manuals or regulations on downsizing or container compatibility in this context. Mr McCooey confirmed the responsibility for the approval of downsizing lies with the DZSO.[298]

265. As outlined in paragraphs 113 and 114 above, the responsibilities of the DZSO and Chief Instructor are referred to in the APF Operational Regulations. Pursuant

[296] T2-17, 12
[297] T5-43, 31
[298] T4-55, 15

to clause 6.1.6(b)(iv), the DZSO must ensure measures are implemented so that equipment being used complies with Part Seven of the regulations.[299] Part Seven relates to equipment.

266. Equipment Standards in the context of clause 7.1.1 of the Operational Regulations are referred to above.

267. The harness and container system must comply with APF Equipment Standards and the Training Operations Manual. The APF Equipment Standards are documented on the website which refers to a number of manufacturer bulletins. There are about 500 bulletins, with the list growing.[300] However, despite the clause saying a parachutist must comply with APF Equipment Standards, the APF states on the website, "*APF makes no claims that it is either definitive nor exhaustive".*

268. Mr McCooey was asked how a DZSO officer can comply with clause 7.1.1, that is, that the harness and equipment complies with APF standards provided the number of bulletins listed on the website, and the reference that the list is not definitive.

> CA: So how do they know that that particular person's meeting the equipment standards? So that makes it very difficult for them to do that?
> Mr McCooey: Yeah, although many of those apply to the reserve. So you might argue, well, they'll have to go through them, by the way, I hate to say this, but there's about 500 – when you say there's a lot of them, there is about 500 and it just keeps growing, but what the DZSO does, normally, is by looking at the reserve parachute and that card, that is all he or she would normally do to satisfy themselves that that part is done because the reserve is signed and a card is put in the equipment that shows when it was signed off and what it was done. That confirms that its meets all those standards that are applicable to the harness and the reserve, which are all, you know, formally approved equipment and the reserve is sealed, sealed closed. So if that seal is there and packing card is there, there'd be no further requirement to look any further at that. So they're then, really, only going to focus their energies on the main.[301]

269. Clause 7.1.8 states, "*a parachute assembly which has been damaged or found*

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[299] Ex C3, 64
[300] T4-49, 17
[301] T4-49, 12

to be unsafe must not be used for descent unless it has been repaired or declared safe by a Rigger or Packer A".[302]

270. Mr Fickling explained that his interpretation of clause 7.1.1 with respect to Equipment Standards is that the equipment is in date, that is with respect to the reserve and the AAD and that the requirements mandated by the manufacturers have been met.[303] Mr Fickling acknowledged that there are voluminous manufacturer recommendations but that is because there is a lot of equipment on the market. He accepted if the equipment did not meet the manufacturer recommendations there has to be a process to make sure it is airworthy.[304] He accepted as the Operational Regulation currently stands it is not a clear process.[305]

271. Mr Fickling confirmed his understanding of the Operational Regulations is that there is nothing in the regulations regarding the checking of the main chute, other than the responsibility of the individual parachutist who is using that equipment.[306] He though, is of the opinion there are the additional checks and balances by the DZSO under a Safety Management System that has been organised by the chief inspector.[307]

272. A number of witnesses recall Toby fulfilling the DZSO role at Skydive Cairns from time to time.[308] Evidence was heard from other persons who had fulfilled the role of DZSO or Chief Instructor role with regards to the extent of checks they thought were required to be carried out at the Drop Zone.

273. Mr Lawson confirmed that prior to the accident apart from the reserve, there was no process of independently checking his equipment.[309]

274. Mr Davies said his personal experience was that it was his responsibility. He thought when he would have started at the Drop Zone, in order to jump his sport rig, the DZSO or Chief Instructor would have taken the time to go over his rig to

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302 Ex C3, 67
303 T5-10, 12
304 T5-10, 32
305 T5-10, 37
306 T5-11, 20
307 T5-11, 31
308 Austin Lawson and Derec Davies
309 T2-73, 31

make sure there was nothing of concern.[310]

275. Mr McGrath is a very experienced parachutist with over 20,000 jumps. He regularly fulfilled the role of DZSO on a Saturday. He confirmed before the accident there was no requirement to handle a camera jumper or sport jumper's equipment.[311] He did though say that if he went to a different drop zone, the first thing they do is go through your equipment and check your licences. He advised when a new jumper comes to a drop zone, checking their equipment is one of the first things that happens.[312] He also said after examining Toby's equipment as the Drop Zone Safety Officer, he would have told him he could not jump until the closing loop was shortened and there was more tension through the container.[313]

276. Mr Tibbitts thought the most practical solution with regards to ensuring a jumper has the appropriate equipment would be to inspect the equipment when it arrives to a drop zone or any time any component is changed. This suggests from Mr Tibbitts perspective there was no requirement to undertake such a check prior to the accident. He did though say it would occur with less experienced jumpers but because of Toby's experience it was easy to assume that he was doing the right thing.[314] Mr Tibbitts confirmed there was no regulatory requirement from APF prior to the accident with respect to obtaining permission from a DZSO before downsizing. He also infers there was no directive for checking such equipment at a Drop Zone before deploying from the site.[315]

277. Mr Newman advised many operations prior to the accident had a checklist to complete when a new jumper arrived to the drop zone. This includes inspecting the equipment, the reserve state and whether it's been packed and is serviceable, that is, all of the components are serviceable. He stated, "*So a lot of operations – not all, because it's not – we don't require it, as the APF doesn't deem it as a mandatory requirement – but most operations, conscientious operators, will have a document in place*".[316]

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310 T2-89, 47
311 T3-13, 27
312 T3-29,0
313 T3-35, 42
314 T1-92, 24
315 T1-93, 45
316 3-65, 45

278. Contrary to Mr Tibbitts and others, Mr Newman seemed to suggest that an inspection at the drop zone when a jumper first presents is required by all DZSOs, he states:

> "*Well, the main is the jumper's responsibility, but, when they turn up at a drop zone – and I can speak from my experience as a safety officer – when somebody turns up, I'm responsible for the equipment that they're jumping, irrespective of what the – if the reserve's in date. The whole system has to be approved, before they can get in the aircraft that are operating at my drop zone. So any part of that system is deemed unairworthy, irrespective of the main's not good; the system looks bad; the pilot chute is not stowed correctly; there's – it's too loose- the equipment won't be used straightway. I wouldn't sign them off – the – after their– for their D brief – DZ briefing. So I don't think another layer's going to improve that. It's just another document that people would have to try and provide to the DZSO, when the DZSO should be able to trust their knowledge and their experience to look at equipment and say, 'That equipment is good', or, 'I don't even like the look of that equipment"*.[317]

279. Mr Newman clarified the issue. He stated, "*Whenever you turn up to a drop zone, if – if you haven't jumped there regularly or if you're a new jumper to that drop zone, you'll be given a drop zone briefing and equipment inspection prior. You have to sign that drop zone waiver as well. It's all part of that process of – on your fist time arriving at the drop zone*".[318] He was of the opinion if Toby had presented to the Drop Zone with the equipment he used on the day of the accident, and it was inspected, it could have been determined his container was not compatible with the main chute.[319]

280. Mr McCooey said Mr Newman was wrong with respect to the inspection and waiver. The waiver is a different process and it is often done online prior to presenting to a drop zone.[320]

281. With regards to the inspection, Mr McCooey said the DZSO would need to do whatever was necessary to satisfy themselves as to the adequacy of the

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[317] T3-80, 7
[318] T3-82, 21
[319] T3-83, 0
[320] T4-47, 45

equipment.[321] He described this as an overall inspection of the whole equipment to ensure it was in order. He explained it was a process of starting at the top of the equipment and working your way down. This would include feeling the reserve to make sure that it had not become a little bit loose with time and to feel for tension in the main. He expects he would have identified Toby's as being very soft.[322]

282. Despite clause 6.1.6(b)(iv) implying this is a requirement each time a person jumps, Mr McCooey said this is not required and stated:

"Practicality – people tend to know each other. And, you know, you would do that when someone arrives because you've got no idea of that. But then on an ongoing basis, again you would say, 'Well, I've satisfied myself this person's right. I saw them jumping yesterday. I know they've done their gear checks". [323]

283. Mr McCooey clarified that clause 6.1.6 is a general statement of responsibility that applies to all DZSOs, not just a particular DZSO that's onsite when the gear first comes to be used at a drop zone.[324] The process with respect to equipment inspection is that the AAD is within the expiry date, the reserve is in date and the overall inspection of the equipment, he stated, "…*would normally involve feeling the – the tension and probably – very definitely if you didn't know the person well, but probably if you – if you did, still enquiring of what type of main parachute is in here, and you would be looking at that for compatibility, and as I touched on a bit before the lunchbreak, also that person's experience level and that that matches. So, all of the – to – to meet all of those points there involves this procedural check of someone when they arrive".*[325]

284. Mr McCooey was asked to clarify the situation by his Counsel:

Mr Roney QC: So, after the first procedural check has been conducted, that is when the gear can be used at the drop zone for the first time, do you see it as necessary to continually make that check each time the gear is used?

Mr McCooey: No. You've got to satisfy yourself that's still the case, but that wouldn't be doing that same thing every jump or every day.

Mr Roney QC: So, your point really isn't that there is a specific rule that says that you

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[321] T4-50, 19
[322] T4-50, 40
[323] T4-51, 2
[324] T4-83, 33
[325] T4-84.6

are to do it when the gear first comes to site, but that necessarily must be the case if you're going to comply with that rule?

Mr McCooey: That's correct.[326]

285. Due to what became a clear divergence of opinion concerning the application of the Operational Regulations, Counsel for Skydive Cairns sought to further clarify the situation with Mr McCooey:

Mr Laidley: Can you see how a DZSO acting in good faith, doing the best they could to apply that regulation (7.1.1), might say, "*Oh, well, I've got to go and look at the APF Equipment Standards in the TOM in relation to the harness and container, not the chutes"*.

Mr McCooey: No

Mr Laidley: You can't see that interpretation at all?

Mr McCooey: No. I – I can see that we could write that better. I mean, it goes on to say: And which has at least two parachutes. I can certainly see how we could write that better, but we've always done it like that. I mean, it's just…when you do a gear inspection, you inspect all of the gear. It's just always the way it's done and that's…

Mr Laidley: So would you accept then that it seems to be a bit of a theme here; is that the regs are written one way, which is the repository of the requirements that someone who's trying to do the best job they can, that's their bible, yet a lot of the answers seem to be "*But we always do it like this*"?

Mr McCooey: I certainly think we could write the – use those words in a better way to describe what we mean.

Mr Laidley: So, again, you would accept that a DZSO acting in good faith, that was satisfied that the harness and container system that they could see visually there that was being used was – complied with the APF Equipment Standards and TOM go, "*Okay, yep, that's all good*", and then the second thing they might do is go, "*Oh, and have they got their two parachutes in? Yes, they've got a reserve and they've got a main*" And then would you accept that, again, the DZSO acting in good faith might say, "*Well, they might have a reserve, but a reserve is only really a reserve if it's in date, so I want to see your card and make sure your reserve is in date?"*

Mr McCooey: Yes

Mr Laidley: Could you see that a DZSO acting in good faith might actually interpret that that way?

Mr McCooey: We'd certainly look at the reserve card. Yes.

Mr Laidley: And if they were looking at that card and they saw that a chief instructor had certified that jumper as being capable of packing their own main chute, do you accept that they would say, "*Oh, and, yes, you're qualified to pack your own main chute,*

[326] T4-84,13

so that's good as well". You've got the relevant qualification"?

Mr McCooey: Yes. That that – this is reasonable.[327]

286. Mr Fickling was asked to explain his understanding of the role of the DZSO with respect to the first inspection when a new jumper arrives to the Drop Zone. Mr Fickling took a broader view of the Operational Regulations. He is of the view the checking of equipment would come under the Drop Zone Safety Management System.[328]

287. Pursuant to clauses 6.1.2 and 6.1.6, the Chief Instructor is responsible for ensuring there is an adequate and appropriate Safety Management System, which is documented and implemented; and the DZSO is to ensure operations are conducted in accordance with the organisations Safety Management System.[329]

288. With regard to what would be a reasonable system, he stated, "*I would consider if they had a – a system of – of checks and it was a-a-a-a checklist-type approach and it was recorded because it's, in essence, it's one thing to do a check but it's something completely different to have evidence that it has occurred…So if those two components had have been in – in the safety management system, I would have considered that would be a reasonable system".*[330]

289. Mr Fickling accepted there was no APF requirement to document the process but that would be a prudent approach under a Safety Management System and that might pass on into your Standard Operating Procedures ('SOPs') of how it is to be completed.[331] He thought that it would have been prudent to have a SOP as to what is required when a new jumper is jumping with a solo rig or a sport rig from the drop zone, particularly in circumstances of it being a commercial operation.[332]

290. Mr Fickling is of the opinion the equipment checking process of a new jumper to a Drop Zone would form part of the risk assessment process of the Safety

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[327] T4-96, 7
[328] T5-12, 5
[329] Ex C3, 64
[330] T5-13, 5
[331] T5-13, 17
[332] T5-14, 36

Management System.[333] As outlined above he described a three part process of checking parachute security which includes checking the pressure on the closing pin; checking the pressure on the flaps; and checking the pressure on the BOC pouch to ensure that the pilot cannot escape.[334] With respect to discharging his responsibilities as a DZSO, he would inspect all equipment, including their helmet, their shoes, and their jumpsuit, if required.[335]

291. I have considered as follows:

I. Part 6.1.6 required compliance with Part 7;

II. Part 7 required compliance with the equipment standards;

III. There were no APF guidelines or an Operational Regulation prescribing a process for checking a sports jumpers equipment to ensure it is fit for the purpose

IV. Further, that there was no APF requirement to keep any record of any such inspections (new jumpers or ongoing jumpers) at the time of the accident.

V. It was apparent from the evidence at inquest that there were differing views regarding how to interpret the relevant APF guidelines and regulations (including by the DZSO on the day of the accident) relating to the process and extent for assessing the equipment of solo sports divers at the Mission beach drop zone against the backdrop of a Safety Management System at the drop zone, and further against the backdrop of a solo sports diver of Toby's experience who was responsible for packing and maintaining his own gear in compliance with relevant standards and manufacturers recommendations;

VI. Toby was one of the most qualified and experienced skydivers at the Mission Beach Drop Zone and it is possible that those who may otherwise have been tasked with Toby's preliminary equipment check upon his first arrival at the drop zone may have deferred to his qualifications and experience and not done so. It is for this reason that I will recommend certification of solo sports equipment and regular and recorded checks of the equipment. (in conjunction with other measures implemented and undertaken by the CASA, the APF and Skydive Australia).

[333] T5-14, 27
[334] T5-19, 30
[335] T5-43, 10

Packing Requirements

292. The inquest heard there are very few vertically integrated skydiving companies that make harness containers, and reserve parachutes. It is often necessary to have a blend of equipment from different manufacturers.[336]

293. There was some disagreement regarding the application of clause 15.3.2 of the Operational Regulations. It requires that parachute packing must be carried out in accordance with the manufacturer's recommendations or the recommendations of an APF recognised publication. One of those being the FAA Rigger Handbook.

294. Mr Van Niekerk, the Queensland APF Safety and Training Officer thought it applied to the way to pack and how a parachute is packed, not to the compatibility of a main parachute with a container. Mr McCooey said it applied to all mains, reserves and that parachute packing in that the term is a very broad term. That is, that it applies to the matching of components, including the main parachute and container. However, this seems in contrast to what Mr McCooey advised in his investigation report, that is, that there is "*no specific APF regulations govern main parachute and container compatibility*". [337]

295. Essentially through a convoluted process as outlined above, if a parachutist was to follow the provision through, it would take the parachutist to the US Advisory Circular which states: "*The assembly or mating of approved parachute components from different manufacturers may be made by a certificated, appropriately rated parachute rigger in accordance with the parachute manufacturer's instructions without further authorization by the manufacturer or the FAA. Specifically, when various parachute components are interchanged, the parachute rigger should follow the canopy manufacturer's instructions, as well as the parachute container manufacturer's instructions. However, the container manufacturer's instructions take precedence when there is conflict between the two*".[338] Further, "*do not install a canopy of lesser or greater pack volume than the intended design criteria for the specific size of container, since it could adversely affect the proper functioning of the entire parachute assembly*".

[336] T1-80, 19
[337] Ex C4, p16
[338] Ex G2, p14

296. Therefore if a parachutist did not have the manufacturer guidelines or was uncertain, they would need to have their equipment checked by a Rigger. Despite the reference to the material in the Operational Regulation, such a requirement is not required for a main parachute in Australia. There is no requirement for a main parachute to be examined or checked other than as some suggest on arrival to a drop zone. However, for reasons outlined above whether this was or was not required seems debatable.

297. There is no reference in the clause or in the Operational Regulations at all to the 1991 APF Rigging Advisory Circular, which deals with compatibility of equipment. This when the Operational Regulations have been updated a number of times since 1991.

298. Mr McCooey agreed that would have been helpful but then with reference to the Operational Regulations stated "*But I think the – the normal way it works is, it's very rare that anyone of – of the, you know, low to even middle-level skydiver would really be interested in that. They would almost always go to the DZSO or chief instructor for advice on that type of thing…*"[339].

299. When a skydiver attains a certificate class B (that is after completing around 30 jumps) they can then seek endorsement for packing their own parachute. Mr Tibbitts acknowledged provided Toby had in excess of 7,000 jumps that would have occurred a long time ago.[340] Toby was responsible for maintaining and packing his own solo sport chute.

300. For an experienced jumper there is no requirement for them to log their main parachute packs. With less experienced jumpers there may be some oversight with respect to the parachutes they are using, less so with an experienced parachutist. Mr Tibbitts stated, "*Obviously, the further people get out on the experience curve, the more likely you are to, you know, leave it with them*".[341] Mr Tibbitts confirmed there was no prescribed way of checking of a sport jumper's equipment to ensure it is fit for purpose.[342] Provided Toby's experience he would

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[339] T4-54, 19
[340] T1-77, 5 `
[341] T1-75, 22
[342] T1-75, 35

have been deemed able to make the judgment regarding his pack volume in downsizing and container compatibility by himself.[343]

301. In response to questions from me Mr Tibbitts responded as follows:[344]:

> Coroner: At some stage, a qualified safety drop zone officer – well, it should have come to the attention of a qualified safety drop zone officer, is that correct? (A) that he had new gear, and, noting that, what would a drop zone safety officer do?
> Mr Tibbitts: Again, it – it would depend a little bit on their experience level. Mr Tuner had been a chief instructor. He held the highest ratings possible. I think you would, as a drop zone safety officer, begin to assume that he was capable of making that decision by himself. If it was a novice jumper, then you would oversee all of that process and you would – I mean, you would have talked them through the purchase of the new canopy and stuff, anyway, but as Mr Turner is – is an outlier in terms of the experience and qualifications he's got, he's – he's very, very senior – you would expect that he would be able to make that choice.
> Coroner: Knowing what you do now, what do you say about that practice?
> Mr Tibbitts: I'm certainly very disappointed that the – it got to where it did – and I'm – I must admit, I was – when I first inspected the equipment at Cairns Police Station, it wasn't packed. We just had a look at, you know, the general shape of things and --- And then when I saw the video supplied by – by Marcel Van Neuren where he packed the canopy, I was pretty horrified.
> Coroner: What were you most horrified about? ---That that was – that that's – that system and that set-up was out there…

302. Mr Tibbitts suspected that it is something Toby did once and it worked and he just kept doing it.[345]

303. I accept Counsel Assisting's submission that there:

I. was no APF Operational Regulation or requirement that anyone other than Toby inspect and pack his main parachute and;

II. that there is a culture in the skydiving industry, which allows those with experience to self regulate with regard to downsizing and container compatibility.

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343 T1-90, 23
344 T1-90, 37
345 T1-99, 42

Jump Logs

304. Investigators were unable to locate, and or access Peter Dawson or Toby Turner's personal jump logs. It was suggested they might have been using electronic logs through an app on their respective mobile phones.

305. Pursuant to clauses 12.2.1 and 12.2.1 of the APF Operational Regulations all parachutists must keep a log of their descents except for student tandem parachutists who are not making their tandem descent as part of a Training Table. The log must contain at least the minimum of the type of descent; date on which the descent was made; location of the Drop Zone; and the exit height.[346]

306. Mr McCooey advised as parachutists become more experienced they do not record very much information. For example, it may just be 10 tandems, on the date the jumps were undertaken.[347] He suspected it is unlikely Toby's log would have assisted him in his investigation.[348]

307. On the basis pursuant to clause 12.2, only the minimum required details were recorded, the data would possibly reveal the number of solo sport jumps Toby had completed prior to the accident and as outlined above while it could be assumed he would have been using the same equipment as he was on the day of the accident, this would not have been able to have been established with any certainty.

308. I accept the submission of Counsel Assisting that I am unable to make a finding concerning whether Toby complied with the Operational Regulation concerning logs as his log was not obtained and there was no process in place by the APF regarding accessing electronic logs. Further, the minimum requirement by the APF did not require Toby to record the equipment being used.

Automatic Aviation Device (AAD)

309. Toby as a F class parachutist was not required under the APF Operational Regulations to have an AAD. Mr McCooey explained AADs were introduced

[346] ExC3, p76
[347] T4-44, 3
[348] T4-44, 7

approximately 20 years ago and originally were only compulsory for student equipment. Then when tandems came along it was compulsory for tandems. Now it is only mandatorily required up until a class C parachutist.[349]

310. According to Toby's reserve card, he previously had an AAD. It was removed on 22 May 2017 during his last reserve pack as it was 'end of life'. They would usually have a 10 year cycle.[350] It is not clear why it had not been replaced but there was no requirement for Toby to do so.

311. I accept Counsel Assisting's submission that Toby was not required to have an AAD on the day of the accident.

Coronial Issue 5: Role and Responsibility of Skydive Cairns

To determine the role and responsibility of Skydive Cairns:

- ***i. for the maintenance and packing of all parachutes used by all skydivers during flights operated by Skydive Cairns;***
- ***ii. for regulating the jump patterns and configurations of skydivers during freefall during flights operated by Skydive Cairns.***

312. I **find** that there is no adverse issue arising from the packing and maintenance of the tandem equipment used at the Skydive Cairns Drop Zone.

313. I **find** Toby packed his own main sports parachute prior to the accident.

314. Mr Van Niekerk, was the DZSO on the day of the accident and the current Queensland APF Safety and Training Officer. He was asked how as a DZSO he ensures clause 6.1.6(b)(iv) of the Operational Regulation is met. He advised he would have to ensure the reserve parachute is in date and on a day to day basis he would be observing people's equipment. He would be scanning everything. He conceded by adopting this process he would not be able to establish if a parachute was the right size for the container. He said he is relying on the instructor that is wearing and jumping with the parachute, that he has done the right thing to ensure his equipment is safe.[351]

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[349] T4-90, 45
[350] T4-81, 0; Reserve Card
[351] T2-14, 27-47

315. In asking Mr Van Niekerk how he as a DZSO would ensure Toby was wearing or using equipment that complied with the APF Equipment Standards, he advised it's the parts of the equipment that are certified, that is, the harness and container and the reserve parachute.[352] He said the main parachute is the responsibility of the user to ensure that it complies.

316. Mr Van Niekerk confirmed that prior to the accident there was no requirement by Skydive Cairns to undertake a physical check of a sport solo jumper or camera jumper's equipment.[353] He agreed that with a tactile inspection he would be able to tell if the parachute was too small for the container because it would be really soft inside.[354]

317. In evidence, Mr Van Niekerk was asked by Counsel Assisiting about inspection of equipment[355]

> CA: As drop zone safety officer, given what we've gone through today, do you believe there was any way that you could identify by observing Toby's equipment, with the regulations that were in place at the time, as to – that it was inappropriate?
>
> Mr Van Niekerk: No. I mean, a visual inspection of it, without touching it and getting into a detailed check of it, no, you can't – you can't tell.
>
> CA: And is it the case that Toby, as being a previous chief instructor, an instructor A, a certificate F, that you believe that he would have the equipment that would be appropriate for him to be using?
>
> Mr Van Niekerk: Yeah. All my experience of Toby and his performance and – I used to go down to – to Townsville and work with him when he was working there, and he was the DZSO at that operation and also pretty much the operations manager. Because it was a very small operation. And so he was responsible for looking after the equipment – the tandem equipment. And in all of the experience that I'd had with him previous to that – when I mentored him with the APF program, when he used to do camera jumps with us, he had the same set of gear – but his care of the equipment was always top notch. I never had a cause to be concerned about Toby's professionalism as far as equipment was concerned.

318. Mr Lewis was the Chief Instructor for the Skydive Cairns Drop Zone. He confirmed prior to the accident, there was no obligation to check the equipment or for either party to check each other's equipment on a day to day prior to the

[352] T2-10, 0
[353] T2-37, 10
[354] T2-37, 5
[355] T2-22, 4-19

accident.[356] He confirmed a buddy system has since been introduced.

319. With respect to when a new person arrives to jump at the drop zone using their own sport rig, they are required to sign a waiver. With respect to an equipment inspection he stated, "*Prior to the accident it would have been checked that – that it conforms with the op – operational regulations and such, as in the reserve is in date, the AAD is serviceable, and that the gear is airworthy to the best of our knowledge. But they, the rules essentially would be that the AAD is serviceable and the reserve is in date*".[357]

320. The extent of the checks was further explored with Mr Lewis as follows:

> CA: In regards to the actual check, so you've said about the reserve, the AAD, and you look doing a visual of the equipment. Are you doing an inspection of, for example, that the main pack volume meets the container requirements? Are you looking at any of those things as part of that inspection process or are you only focused, really, on the reserve and the AAD
>
> Mr Lewis: We're – prior to the accident?
>
> CA: Yeah?
>
> Mr Lewis: We're focused on – on the legalities of it, as in the AAD and the – the reserve. It would depend on the condition and the age of the container as to how much further you would then scrutinize things. In – but there wasn't a packer volume check on – with main canopies --- into containers, no.[358]
>
> CA: So that is going back to the regulations…?...
>
> Mr Lewis: Yes.
>
> CA: ---and saying with a sport rig, that's all that's required to be checked because otherwise the parachute jumper is independently responsible for their own equipment --->?
>
> Mr Lewis: Yes.
>
> CA:---including their main parachute, making that decision whether it's appropriate for the container. So back at that time, that was all that was required; is that?
>
> Mr Lewis: Yes.[359]

321. Mr Van Neikerk confirmed that it was common for the Skydive Cairns packers to pack for sport solo jumper, and camera jumpers who are using their own

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[356] T3-89, 32
[357] T3-95, 43
[358] T3-97, 18
[359] T3-97, 18

equipment.[360] There was no record kept of packing sport and camera jumper parachutes.[361] However, the master log will record the type of jump a parachutist is doing, including sport and camera jumps.[362]

322. Mr Gilmartin confirmed there was no documented procedure to check the equipment of a new person to the drop zone. Further, there is no reference to such checks being required as part of the Safety Management System.[363] He stated, "*it was more done on a look and feel and sighted. So the rig would be checked and then and deemed fit for purpose. If a new instructor was to arrive at a drop zone, their gear would be checked. It would be checked by the drop zone safety officer or the chief instructor before, again, it was deemed fit for purpose*".[364]

323. I have considered the submissions of Counsel Assisting and Skydive Australia. There is no record held at Skydive Cairns that Toby's solo sports rig was inspected when he first arrived at the Mission Beach Drop Zone. Notwithstanding, I accept that it was the usual practice of Skydive Cairns to check a solo sports rig when first bought to the drop zone to the extent of ensuring the reserve chute was in date and the AAD was serviceable.

324. I find that it was not the usual practice of Skydive Cairns to check the main parachute size compatibility with container volume of solo sports jumpers, by way of a tactile feel or other means, compatibility because the APF regulations were interpreted by Skydive Cairns as requiring a solo jumpers to be independently responsible for those aspects of their equipment.

325. I therefore find it is more probable than not that the compatibility of Toby's main sports chute was not inspected by Skydive Cairns at any time from his commencement at the Mission Beach Drop Zone on or around 16 December 2016 up to and including the date of the accident on 13 October 2017. Had a thorough and complete check been undertaken, and had the rig been the same as that used on the day of the accident, including by way of unpacking, repacking, a tactile examination, and reference to manufacturers specifications,

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[360] T2-17, 35
[361] T2-18, 11
[362] T2-19, 30
[363] T5-60, 41
[364] T5-60, 29

the incompatibility would have been detected.

Coronial Issue 6: Skydive Cairns policies and procedures

To determine if Skydive Cairns had policies and procedures and/or a Safety Management System (SMS) in place with respect to the tandem skydive of Kerri Pike and Peter Dawson, and the solo skydive of Tobias Turner, and if so, were they complied with, and were they adequate.

326. I accept the submissions of Counsel Assisting and I **find** there was no reference in the SMS to equipment checks for solo sport parachutists. Further, prior to the accident there were no SOPs, which addressed equipment checks of solo sport parachutists, or buddy checks on a day to day basis.

Coronial Issue 7: Role of CASA

The role of the Civil Aviation Safety Authority ('CASA') in monitoring and enforcing safe practices in the commercial / tourism parachuting industry, including the review of serious and fatal incidents.

327. This issue has been addressed above.

Coronial Issue 8: Qualifications of personnel

To determine whether the qualifications required by the APF and Skydive Cairns were appropriate in respect of the skydiving instructors and the chute packers for the activities being conducted on 13 October 2018.

328. The APF has a regime of certificate requirements. A jumper with an A certificate class is a novice, the ratings continue numerically to an F certificate class rating which is the highest rating.[365] At certificate class B, a parachutist must be signed off to pack their own parachute.[366]

329. A similar regime is in place with respect to Instructor Ratings. A novice Instructor holds an Instructor Rating D, with the highest rating being an Instructor A rating.[367] To obtain a Tandem endorsement, the parachutist must have

[365] T1-31, 31; and ExC17, p20
[366] T1-32, 0
[367] T1-32, 25

completed at least 500 jumps.[368]

330. There are two 'packer' qualifications, Packer A and Packer B. Packer A is a higher qualification than a Packer B. A Packer A is able to pack main parachutes and reserve parachutes on equipment they are familiar with. A Packer B can only pack a main parachute they are familiar with. A Packer A can pack their own reserves to meet the mandatory checking requirements of the reserve.[369]

331. There then is the qualification of a Rigger. A Rigger can exercise all privileges and rating below them and are able to undertake substantial repairs to equipment, provided they do not modify design.[370]

332. The qualifications of Peter Dawson and Toby Turner are set out in in these findings.

333. Mr Tibbitts confirmed with an instructor rating, a tandem endorsement and a sub endorsement in the context of the equipment used by Peter Dawson he had the necessary qualifications to undertake tandem jumps with students attached to him.[371]

334. Mr Tibbitts confirmed he was satisfied that Toby Turner had the necessary qualifications to undertake the sport solo jump he was doing on the day of the accident.[372]

335. No witness has identified any concern with the qualifications of either Peter or Toby in the context of the activities they were carrying out on the day of the accident.

336. There was evidence at the inquest that the packers' employed/contracted by Skydive Cairns would from time to time pack parachutists own private equipment. The packers had the necessary qualifications to undertake this work and it was generally a private arrangement between the packers and the parachutists contracted to Skydive Cairns. There was no evidence before me that Toby had

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[368] T1-32, 38
[369] T1-43, 40
[370] T1-33, 12 -21; and ExC17, 28
[371] T1-33, 35
[372] T1-34, 17

the Skydive Cairns packers pack his solo sport parachute.

337. I accept Counsel Assisting's submissions and I **find** that the personnel at the Skydive Cairns Drop Zone had the necessary qualifications and that those qualifications were appropriate for the respective roles they carried out on the day of the accident.

Coronial Issue 9: Training/Certification Process

To determine whether there were any deficiencies in the relevant training/certification process and ongoing licensing renewal process conducted by the APF that could have contributed to the deaths.

338. As outlined above there was clear conflict concerning the interpretation of the Operational Regulation concerning the obligations of a DZSO and ensuring parachutists comply with Part 7 of the Regulation. Further, there was confusion concerning the meaning of clause 7.1.1 with respect to Equipment Standards and the checking process.

339. As a result of the interpretation adopted by personnel at Skydive Cairns including the DZSO, there was a missed opportunity to inspect Toby's rig on his arrival to the Drop Zone on 16 December 2016. I refer to my comments in paragraph 324 above in relation to the missed opportunity to detect the incompatibility. It is of course possible that Toby's rig as at the date of accident was not set up exactly the same as it was in December 2016 when he first came to the drop zone.

340. I accept Counsel Assisting's submissions that there was potentially a missed opportunity to identify an incompatibility with Toby's sport rig equipment when he commenced working at the Drop Zone, and although speculative to predict the outcome of an inspection almost 10 months prior to the accident it is more probable than not that Toby's rig was similar in all material respects.

341. Further, there was evidence provided at the inquest and during the investigation that there was some misconception concerning what is adequate regarding the appropriateness of a container when there is tension on the closing loop.

342. Mr Van Neuren thought further education and training was required. He stated,

"…*But yes, as a rigger I noticed that there's generally a fair amount of knowledge lacking in jumpers about how their equipment actually works*".[373]

343. I accept the submissions of Counsel Assisting that were at the time of this accident deficits among skydivers knowledge with respect to equipment, in particular the appropriateness of downsizing to a current container and whether there is compatibility of the equipment which would ensure the three steps Mr Fickling spoke of with regard to rig security: (a) checking the pressure on the closing pin; (b) checking the pressure on the flaps; and (c) checking pressure on the BOC pouch to ensure the pilot cannot escape.

Coronial Issue 10: Recommendations

In accordance with s46 of the Act, are there any comments the Coroner could make which may prevent deaths from happening in similar circumstances in the future?

344. The APF have made a number of recommendations which in essence have been implemented. Briefly they include:

    a) Distribution of a number of publications addressing safety issues directly relevant to the accident;[374]
    b) A presentation at the May 2018 National Symposium by STM[375];
    c) Hangar talks by Safety Training Officers[376]; and
    d) Identification of compatibility of main and containers as a risk and a requirement for the Chief Instructor of each Drop Zone to consider the issue and implement a check list at his or her Drop Zone[377].

345. It is proposed that questions will be added to the Certificate A and B examinations and that the topic be added to Certificate B and Star-crest manuals as a basic RW safety principle. The Certificate B education and packing syllabus will include information on compatibility. It is envisaged this work will be completed by March 2019.[378]

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[373] T4-25, 31
[374] Ex C37
[375] Ex C37
[376] Ex C37
[377] T4-89, 10
[378] Ex C37

346. There were a number of suggestions posed to witnesses during the inquest with respect to improving processes. Examples include:

a) banning solo sport jumpers jumping with tandems. This was unanimously thought to be unnecessary and that there were a number of benefits in having a solo sport jumper, jump with a tandem;

b) having some sort of process in place where the main parachute is checked at the same time as the reserve. That is, parachutists are required to send their entire rig off to have it assessed as airworthy by a Packer A or Rigger. Some witnesses saw some merit in this, others thought it would be difficult due to the possibility of the main being changed between inspections or immediately following the inspection[379] (the current cost to parachutists to have their reserve checked by a Packer A or Rigger is approximately $70 to $100[380]); and

c) having a parachutist provide evidence that the main and container meet manufacturer guidelines, or in the alternative, a certificate from a Rigger that the equipment was compatible and airworthy. Again some witnesses saw some merit in this but raised the issue of conflict between a DZSO saying the equipment is not safe when a Rigger has certified it to be safe.

347. With respect to having both parachutes and container inspected and certified in some way or another by a Rigger or a Packer A, Mr McCooey stated:

"*We held a – I wasn't in it but – but the rigging – there's a rigging committee, a rigging expert committee within the APF consisting of seven of the most senior riggers in Australia. That was put to them as an idea and they came back to say – it was a long answer but – there was a number of complexities in that and they don't think that's very workable. And that they think it should be done at drop zone level initially and only if there's some issue, it then be referred to a – to a Rigger of Packer A.*"[381]

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[379] T1-87, 35
[380] T1-87, 14
[381] T4-89, 41

348. The main issues seemed to be, that rarely is the main sent with the reserve and that some parachutists may have purchased a rig and reserve but not a main as yet. Further, that the Riggers feel they loose control as soon as the rig leaves them, the parachutist can change the main.[382]

349. Mr Fickling also saw some challenges in adopting this system. They included that not everyone would certify the same way in the same parts of Australia; that the main parachute could be changed following certification; and the length of the closing loop could be changed.[383]

350. Skydive Cairns implemented two new policies following the accident.[384] One includes a six monthly review of equipment documented using a checklist. It includes checking that both canopy sizes are appropriate to container size. It does not cover having a parachutist undergo a further check when the closing loop has been altered or changed.

351. Even with the new Skydive Australia process in place, Mr Van Niekerk, the Queensland APF Safety and Training Officer was concerned that the checking of the compatibility of equipment comes down to the instructor and what he or she thinks is normal and acceptable.[385] He advised since introducing the new procedure, they have found that some rigs that had been through the inspection process were later picked up by other instructors, or chief instructors, as not being acceptable.[386] He thought the standard or criteria for checking the equipment was missing.[387] Mr Van Niekerk is of the view that the parachutist should have to confirm that a parachute and container meet the manufacturer specifications, and that if they do not, the equipment has to be certified by a Packer A or a Rigger that it is appropriate and fit for purpose.[388]

352. Mr Van Niekerk does not think it necessary for the APF to say how small is too small but that "*there's a requirement to supply clear and specific criteria as to how a person that's buying a main parachute and installing it in their own container, because they're allowed to – that would also allow them to do that.*

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[382] T4-90, 10
[383] T5-38, 21
[384] C4, p120
[385] T2-25, 41
[386] T2-35, 22
[387] T2-35, 24
[388] T2-26, 14

What are the criteria that they are to use to do that? That – what I'm saying is that criteria needs to be more clearly stated than it is at present. In the education from all the way from the beginning".[389]

353. Mr Van Niekerk clarified regarding relying on a person's experience without criteria. He stated:

"*Their qualifications and their – what – what's normal for them. If it's – because it has become common practice for the downsizing to happen and to various extent –to various degrees depending on where you are and the environment that you're in so if an instructor has been in an environment where it's acceptable perhaps not to this degree but to a slightly less degree for the – you know the incompatibility to be, okay, I think this is okay, then check and go, no, that's not acceptable. Because, I mean, Toby obviously, when he packed that and jumped it felt that that was acceptable. And in every other way in Toby's professionalism and conduct in everything he was top notch*".[390]

354. Mr Tibbitts saw the new Skydive Australia checking process to be a positive step and agreed a documented record of any such checks should be made and retained.[391] Mr McCooey advised he thought it an appropriate policy[392], further that it would be required under the SMS and the requirements for the checks can be incorporated into the Operational Regulations.[393] Mr McCooey advised the APF planned to adopt the criteria used in the Skydive Australia checklist as a minimum requirement but that different Drop Zones could modify the checklist to meet their own local requirements.

355. With respect to the Skydive Australia Tandem Camera flying policy, it was said to also apply to solo sport jumpers but it was acknowledged this was not clear in the wording.[394]

356. Mr Van Niekerk advised in addition to the two policies, at Sykdive Cairns, parachutists are now required to undertake buddy checks. It is a full inspection against a checklist, which the instructor undertakes and then a fellow instructor

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[389] T2-49, 33
[390] T2-55, 31
[391] T1-89, 10
[392] T4-89, 29
[393] T4-90, 37
[394] T2-27, 162

undertakes. Mr Van Niekerk advised other organisations do not require this and it was not a requirement of the APF.[395] Mr Newman spoke of such a process at other Drop Zones.

357. Mr Newman advised it might not be appropriate to rely on manufacturer recommendations because different manufactures' volume measuring, for example, a container may not be the same as the parachute manufacturer. He said there is no industry standard. He stated,[396]

"*Generally, the answer is that the person conducting the inspection is an experienced person with handling skydiving equipment, and they would first of all do a visual check. I would look at it, I would be asking what the equipment is, and then I would be checks such as – you can feel the container, to feel whether it is very soft or whether it is appropriately tight, or whether it is excessively tight. Then you can try and remove the closing pin to see if there is enough tension – sufficient tension on it. The pilot chute that is placed in the pouch underneath, in the stowage pouch, you can – generally, you would try and extract that just to see if there's enough tension on that; that is being held securely. Basically, it's an experienced person that would make an experienced judgment call on whether that equipment looks safe, feels safe, and they deem it appropriate for use*".

358. Mr Van Neuren agreed not all manufacturers have consistent data on compatibility, which makes it difficult to match equipment up.[397] He saw problems with having a Rigger sign off on a rig, which includes an inspection of the main parachute during an annual check, because parachutists may change their equipment.[398].Further, he advised it is for the individual parachutist to change their closing loop when it wears out and that it is up to the parachutist to set their own closing loop length.[399]

359. Mr McCooey advised not all manufactures measure their square footage, even in the same way. Some measure the top, some the bottom and there is a difference.

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[395] T2-53, 10
[396] T3-65,20
[397] T4-22, 27
[398] T4-46, 0
[399] T4-24, 0

360. Mr Fickling confirmed there is no current standard for certifying/checking main parachutes and container compatibility.[400] He opined the expertise with drafting such a standard lay within the expertise of the APF.[401]

361. On day four of the inquest, the families of the deceased were asked to review the statement of Mr MrCooey regarding the steps the APF have undertaken to implement its recommendations and to consider whether any additional recommendations are warranted. The Turner family did not have any suggestions at that time. The Pike family elected to address the issue of recommendations in their written submissions. The Dawson family suggested as follows:

a) Introduce a mandatory certification process that assesses the compatibility of a particular canopy to a particular container;

b) Make, type and serial number of the container is certified to accept a make, type and serial number of a canopy based on manufacturers specifications and recommendations; and actual pack volume is suitable and compatible;

c) That this certification is carried out by a rigger;

d) That the certification is held on a master log by the APF, and accessible by DZSOs, Chief Instructors, Safety and Training Officers, and Drop Zone administration;

e) That this certificate is held within the rig;

f) Canopies without a suitable serial number be rejected until the actual serial number has been substantiated;

g) That suitable SOPs and SMSs are in place for checking the validity of the canopy/container certification on a periodic basis; and

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[400] T5-38, 28
[401] T5-38, 33

h) Education to be communicated to all registered parachutists with a traceable acknowledgment that they have seen it.[402]

FURTHER CONSIDERATIONS

362. To date is has been incumbent on solo sports jumpers to maintain and pack their own equipment and assume responsibility for compatibility when downsizing. There is within the industry a practice that the more qualified the skydiver the less requirement for independent inspection of equipment. From the vantage point of this Inquest I perceived a potential conflict of interest in a situation where a highly experienced professional solo sports jumper (in this case with 8000 or so jumps) was flying outside the limits of his equipment on the same jump as a first time student / fee paying customer having her first tandem experience.

363. If sanction is given to those two experiences happening simultaneously (ie on the same jump) then all caution needs to be exercised, implied permissions en route or in situ are insufficient in that situation. Fully informed consent of all participants and the drop zone safety officer and / or chief instructor is the starting point. Such a starting point may also then trigger a tactile buddy check of the sports divers equipment– which should by then have been independently inspected upon first arrival at the drop zone so as to ensure all that was reasonably practicable for the safest experience.

364. Sports jumpers, indeed any jumpers with non-compliant gear, or to use the industry phrase is not 'free fly friendly' cannot be permitted to jump with a tandem student during the conduct of business operations. Compliance with manufacturer recommendations must be a transparent process no matter how experienced or skilled the skydiver.

365. I take into account by comparison how thorough and regular the inspection and maintenance procedures were regarding tandem equipment.

366. If meaningful reform is not undertaken within the skydiving industry in line with the recommendations arising from this inquest; consideration should be given by the APF, Skydive Australia and CASA to prohibit the practice of free of charge

[402] Email from the Dawson Family

solo sports jumpers sharing the same jump with a tandem pair comprising a student / paying customer for the following reasons:

- The solo jumper is not jumping in an official capacity with clear roles and responsibilities owed to the commercial tandem jump or jumpers;
- They are jumping for their own reasons and purpose;
- The equipment used by a solo sports jumper is not subject to the same independent scrutiny as the rigs utilized by commercial operations for tandem jumps with paying customers;
- Notwithstanding the requirement to comply with relevant industry rules and regulations there is distinction between solo sports jumping with your own gear and tandem jumping in the setting of a commercial environment using company equipment subject to different inspections and auditing and levels of compliance;
- There is also a question of the risk assumed by each jumper – does the risk assumed by a solo sports jumper utilizing his own equipment assume a different level of risk to the tandem student / paying customer on their first flight within a commercial / for profit setting;
- I make these comments noting that camera jumpers contracted by the company to take footage in an 'official capacity' also fall within the classification of sports jumpers – which is in my view another discrete category again, noting they are engaged for a specific (business) purpose.
- The sports jumper using their own equipment is essentially required to self-regulate in relation to choice of main parachute / container compatibility; packing; the use and maintenance of logbooks and the use of AAD's;
- The tandem operation utilizes independent third party inspection and packing; AAD's and is subject to company and APF audit.

367. I also further add here that noting Toby was contracted to Skydive Cairns, operated from Mission Beach drop zone, was a passenger in a Skydive Cairns authorized flight from the airfield, had the implied consent of the Skydive Cairns DZSO, and implied consent from the tandem master to join him on that jump. Toby was therefore jumping within a sanctioned setting, and was entitled to be as safe in the air as any other person.

368. The Pike family in their submissions urge me to recommend that commercial tandem skydiving be separately regulated from the sports skydiving community.

They submit that CASA is best placed to regulate the tandem operations and the APF best placed to regulate sports skydiving.

369. I accept that a distinction can be made between the skill levels, intentions, motivations, equipment used, regulation of each activity, including for inspection and certification of equipment and use of AAD's, and the level of risk assumed of a tandem fee paying client / students and a solo sports jumpers. This inquest has crystallised that distinction. Noting those distinctions, the question then becomes, can both share a common professional body. Further, can both share common airspace safely.

370. If there is a conflict between commercial and sports diving operations, then the issue of separate regulation is a live issue.

371. It seems to be that CASA allude to that distinction, where in their written submissions they refer to the 'higher standard of regulation in the conduct of commercial (tandem) operations' (vis a vis sports jumping)

372. To this end I refer to the written submissions on behalf of the Civil Aviation Safety Authority and note the inclusion of Parts 149 and 105 into the CASA regulations:

- Will mandate the regulations for all skydiving associations (currently APF and the ASA, once transitioned to an Approved Self-administering Aviation Organisation by 2021);
- Further regulate both commercial (tandem) operations and the sports parachuting community;
- The intent of the new regulations will comprise appropriate parachute equipment standards and;
- relate to the airworthiness of parachute equipment, such that it is maintained to a known and acceptable level.

373. I accept the submissions of CASA and further note the regulator will:
    - o scrutinize the requirements for keeping logbooks;
    - o include / develop a process for ensuring informed consent from all participants.

374. I have regard to CASR Part 105 as published on the CASA website (after Inquest) and note that Part 105 of CASA 1998 will prescribe the rules for sport parachuting from an aircraft including:

- Maintenance and certification of parachutes;
- Standards of personnel;
- The conduct of parachute descents

375. CASR Part 105 will affect individuals and organisations involved in sport parachuting operations.

376. I do not intend to formalise a recommendation for separate regulation of the commercial tandem industry and sport parachuting. The recommendations regarding new standards for inspection of sports diving equipment and the enhanced regulatory framework introduced by CASA are intended to close a gap that currently exists. The heightened vigilance bought about by this inquest has triggered a response that will enhance scrutiny and regulation of the industry.

377. I refer to the Pike family submissions regarding concerns that there is a lack of recourse to prosecution for breaches of safety regulations within the industry. I accept however that existing civil aviation legislation contains offence provisions and CASA may take action for contraventions of civil aviation legislation. Recourse is also available to the criminal law.

378. The Pike family further submit that solo sport skydivers be prohibited from undertaking relative work with tandem skydivers.

379. I accept that would be a relevant consideration in the absence of the reform and recommendations proposed in these findings. As the recommendations include a mandatory requirement for informed written consent for RW prior to departure be obtained from the DZSO, the tandem master and the client / student, and with enhanced inspection regulations for sports divers equipment in place and new CASA regulations it may be deemed by the regulator as sufficient to ensure safe airspace for all.

RECOMMENDATIONS

Overarching recommendation

The written submissions of Skydive Australia insofar as recommending an initial certification process for sports divers equipment in my view has merit. The initiating process in conjunction with ongoing regular checks per the additional recommendations below will ensure equipment is maintained to the highest standards. The Dawson family also submitted in similar terms.

I have formulated the below recommendation taking into account the transparency, experience and independence of a Rigger, Packer A and manufacturer when certifying the equipment to be used by a sports diver at first instance, and thereafter consider that the drop zone from which the sports jumper operates should remain responsible for regular checks on the equipment, to act as a gatekeeper as such.

The below should also be read in conjunction with the specific recommendations to each stakeholder contained in these findings. I accept from the evidence and the further written submissions many of the recommendations and proposals have already been adopted or considered.

It is not suggested the strict adherence to the below wording is necessary for the inclusion in APF or CASA regulations and / or any protocols developed by Skydive Australia including within their Safety Management System, however the intent is clear – an initial certification process on the equipment by the most skilled packer / riggers and then ongoing inspection and review at the drop zone by a safety officer.

1. A person must not undertake a skydive unless:

    a. using a main chute and container certified by a Rigger or Packer A as being airworthy when used together or;

    b. the parachute and container were received from the manufacturer as a complete (compatible) unit and compliant with the manufacturers recommendations regarding main and reserve canopy specifications.

2. Proof of certification must be provided by the skydiver to the drop zone safety officer (DZSO) prior to undertaking the first jump using that equipment at any drop zone.

3. The Drop Zone Safety Officer must:

   a. Conduct an equipment check that complies with the APF and CASA regulations for a first time sports skydiver using their own equipment (currently that would require strict compliance with APF Regulations 6.1.6 and Part 7);

   b. As part of the first time inspection at the drop zone obtain a declaration and a copy of the certification from the skydiver that states:

      i. The skydiver is using equipment certified as airworthy by the manufacturer, a rigger or Packer A;
      ii. The main parachute and container have not been modified since they were certified (and if they have then the skydiver is responsible for obtaining a further certification from a rigger or Packer A or the manufacturer prior to jumping with that equipment);

   c. Obtain a signed written declaration from the skydiver to that effect.

4. The drop zone must maintain a written record of the first equipment inspection and subsequent inspections of the sports equipment.

5. A drop zone must maintain mandatory six monthly equipment checks on all sports rigs to ensure that the equipment remains as it was certified upon initial inspection.

380. Having considered all of the evidence before me and the written submissions addressing each of the recommendations proposed for my consideration by Counsel Assisting the Inquest I make the following recommendations (noting that some have been overtaken by the implementation of procedures and regulations by the various stakeholder prior to Inquest and subsequently).

APF

a) The APF consider amending the waiver for Tandem students to include the requirement for written consent to participate in Relative Work, and that the risks associated with Relative Work be explained to the student prior to the completion of the waiver. This requirement be incorporated into the Operational Regulations.

b) The APF consider incorporating a requirement for mandatory six monthly equipment checks of all sport rigs to be used at a Drop Zone, into the Operational Regulations.

c) That such a checking process is a documented process similar to the Skydive Australia checklist but addresses the issue of a change to the closing loop.

d) The APF consider developing a guideline/standards to compliment the Operational Regulation with respect to the checking of equipment, including a main chute and container compatibility.

e) The APF consider the level of qualification required of the person(s) who can undertake the six monthly equipment checks at the Drop Zone, including whether this should be limited to only those persons holding a Packer A qualification and that those persons undergo training with respect to the newly developed guideline/standards. This requirement also to be incorporated into the Operational Regulations.

f) The APF consider implementing a process for mandatory day to day ‘buddy checks’ of equipment prior to a parachutist boarding a plane, and that this requirement be incorporated into the Operational Regulations.

g) The APF consider developing a guideline/standards for ‘buddy checks’, which complement the Operational Regulation with respect to the ‘buddy checks’.

h) The APF amend the wording Part 7.1.1 of the Operational Regulations concerning Equipment Standards, and ensure that all elements of Part 7 are achievable with respect to the obligations of a Drop Zone Safety Officer on a day-to-day basis.

i) The APF consider amending clause 15.3.2 'Packing Requirements' of the Operational Regulations in the context of the above recommendations. That is, it also specifically addresses main chute and container compatibility. The reference to Poynter's Parachute Manual and the FAA Rigger Handbook should only be referred to as resources, not as a requirement for packing.

j) The APF consider rescinding RAC No. 215 and instead address equipment compatibility in the Operational Regulations in the context of incorporating the above recommendations into the Operational Regulations.

k) The APF consider how it will address the issue of electronic logs and accessing that information from parachutists should it be necessary.

l) The APF consider implementing a training campaign to inform all members of any changes implemented above.

<u>Skydive Australia</u>

a) Skydive Australia consider amending its procedure 'SA Sport Gear Check' to include reference to the tension on the closing loop, including addressing the issue of a parachutist changing or adjusting their closing loop. That is, that any change to the closing loop would warrant re-inspection.

b) Until such time as the APF develops guidelines/standards for equipment checks, Skydive Australia consider developing its own criteria. This to try and improve consistency and rigor to the process.

c) Skydive Australia consider amending its procedure 'Tandem Camera Flying' to make it clear the procedure also applies to those parachutists

undertaking Free of Charge jumps.

d) Skydive Australia formalise the day to day buddy check system by developing guideline/standards for undertaking such checks and incorporating those processes into a Skydive Australia procedure.

CASA

a) CASA to consider including a regulation concerning equipment compatibility, in particular main parachute and container compatibility.

381. I acknowledge that CASA have incorporated Part 105 and 149 into the relevant regulations (referred to above in these findings).

b) CASA to consider recommending to the Australian Skydiving Association the implementation of six monthly equipment check and a day to day buddy checking system, as proposed to the APF above

CONCLUSION

382. This was a tragic accident, which resulted in the deaths of three much loved community members from the Mission Beach area. Their deaths have impacted many.

383. It is hoped that the coronial process and the recommendations I have made will assist in avoiding such a tragic accident from occurring again.

ACKNOWLEDGEMENTS

384. I acknowledge the untiring efforts of Counsel Assisting this inquest, Ms Melinda Zerner. Her preparation, conduct of the inquest and comprehensive written submissions were of the highest quality.

385. That her submissions and recommendations as submitted to me, were adopted in the main by the CASA, the APF, Skydive Australia and the next of kin was testament to her efforts, professionalism and preparation.

386. I acknowledge the respect and courtesy demonstrated by Queens Counsel, Counsel and instructors to Kerri's, Toby's and Peter's family provided this inquest

with the best opportunity to distill the important lessons and make recommendations that will likely prevent similar deaths in the future. I thank all of you for your unfailing willingness to do all that was required to make meaning of these tragic deaths.

387. It was not lost on those attending the inquest that many people were operating in extremis after the accident occurred. Peter Dawson was located by his best mate. The local skydiving community were on scene within minutes to assist and were confronted with the situation of their deceased friends and colleagues. Alister Pike arrived in the vicinity of his wife. Whilst not a witness at inquest, one could not help but spare a thought for the local people who called through the tragedy to Triple 0 and their efforts prior to the arrival of the QAS. The sole QAS paramedic on duty was confronted with an unprecedented situation during which he attended one fatality scene with no knowledge of the second scene, to which he was soon thereafter called. I acknowledge QAS paramedic Adrian House and his efforts.

388. I also acknowledge Sergeant Nowitski the investigating officer and point of contact for the families, Sergeant Ezard for his comprehensive forensic crash unit report and the Australian Parachuting Federation for their assistance to the Queensland Police during the investigation.

389. I acknowledge that CASA, Skydive Australia and the APF were proactive in their desire to both understand the lessons learned, and to develop solutions prior to the commencement of Inquest.

390. This was an unprecedented tragedy, an accident in an otherwise safe sport.

391. To the family of Kerri, Peter and Toby this process may not have eased your pain, or answered all of your questions, please know however that you have been heard. Go gently as you move on and find a way to heal your hearts.

I close the inquest.

Nerida Wilson
Northern Coroner
CAIRNS
30 August 2019