Arbitration CAS 2021/A/7930 Blake Leeper v. World Athletics (WA), award of 4 November 2021

Panel: Mr Georgios Petrochilos QC (Greece); Mr Ucheora Onwuamaegbu (Nigeria); The Hon. Annabelle Bennett AC SC (Australia)

Athletics
Eligibility
Application of the general principles of law
Res judicata
Proportionality of a rule

1. **Given the transnational character of international sporting competitions and the global effects of the actions and omissions of international federations, national and international sports federations must conform to a set of unwritten legal principles – a sort of *lex mercatoria* for sports or, so to speak, a *"lex ludica"* or *"lex sportiva"*. Such general principles may include general principles of law drawn from a comparative or common denominator reading of various legal systems, such as fairness, good faith, prohibition of arbitrary rules and measures, *venire contra factum proprium*, non-retroactivity of laws, the right to be heard, and proportionality. The only exception to their application is if such general principles were in conflict with some national or transnational public policy provision applicable to a given case.**

2. ***Res judicata*** **is a principle of Swiss (procedural) public policy, which must be respected by an arbitral tribunal seated in Switzerland on pain of annulment under Article 190(2)(e) PILA. Under Swiss law, *res judicata* has two aspects, which are interrelated but separate: a negative aspect i.e. a claim finally adjudicated cannot be relitigated and a positive or affirmative aspect i.e. a final adjudication of a claim must be respected in subsequent litigation. In both instances, *res judicata* applies only when the *"parties"* and the *"object of the dispute"* are identical to those in the previous proceedings.**

3. **Absent any explanation why a rule is not a necessary, reasonable or proportionate way of achieving a federation's legitimate objective of ensuring the fairness and integrity of competition, the proportionality analysis of the rule hinges on whether there exist any other practical alternatives to the rule. In the absence of workable alternative, the adoption of a novel alternative is not justified.**

I. PARTIES

1. The Appellant, Mr Blake Leeper ("Mr Leeper" or the "Athlete"), is an elite, bilateral transtibial amputee sprinter from the United States of America. He specialises in 400m races and has achieved remarkable success at the elite international level. Being a double amputee, Mr Leeper uses passive-elastic carbon-fibre running-specific prostheses ("RSPs" or "blades") to run.

2. The Respondent, World Athletics ("WA"), formerly known as the International Association of Athletics Federations ("IAAF"), is the international governing body of the sport of athletics, recognised as such by the International Olympic Committee. It is seated and headquartered in Monaco.

II. OVERVIEW OF THE CASE

3. This dispute relates to the applicability and interpretation of WA Technical Rule 6.3.4, which came into effect on 31 January 2020. Under the preceding and related provision, Rule 6.2, *"[a]ny athlete"* is precluded from *"giving or receiving assistance from within the competition area during an event"*. Rule 6.3.4, which defines *"assistance"*, disallows *"[t]he use of any mechanical aid, unless on the balance of probabilities the use of an aid would not provide them with an overall competitive advantage over an athlete not using such aid"*[1].

4. By application dated 24 December 2020, Mr Leeper sought WA's permission to compete at WA-sanctioned events, including the 2021 Tokyo Olympics and related qualification events, on RSPs that give him a height of 185.42 cm (6'1")[2]. On 26 April 2021, a five-member Mechanical Aids Review ("MAR") panel established by WA rejected Mr Leeper's application. In a reasoned decision (the "MAR panel decision"), the MAR panel held that Mr Leeper's chosen RSPs conferred upon him an *"overall competitive advantage"* because they enabled him to run *"taller"* than his *"natural height"*, i.e. the height he would have been if he had fully intact biological limbs. The MAR panel thus concluded that Mr Leeper's proposed blades were accordingly *"not allowed"* under Rule 6.3.4.

5. In these proceedings, Mr Leeper appeals against the MAR panel decision to the Court of Arbitration for Sport ("CAS"). He seeks an award from the CAS reversing the MAR panel decision and declaring him eligible to compete in all WA-sanctioned events, including the 2020 Tokyo Olympics taking place in 2021, using his proposed RSPs.

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[1] Prior to its amendment on 31 January 2020, WA Technical Rule 6.3.4 imposed the burden of proving the absence of an overall competitive advantage on the athlete (*"The use of any mechanical aid, unless the athlete can establish on the balance of probabilities that the use of an aid would not provide him with an overall competitive advantage over an athlete not using such aid"*). See *infra* at paras 10 *et seq*.

[2] The RSPs in question are J-shaped category 3 Ottobock 1E90 Sprinter RSPs.

III. FACTUAL BACKGROUND

6. The Parties adduced extensive evidence and submissions in support of their respective positions in this appeal. This section contains a summary of the relevant facts and allegations, based on the Parties' written submissions, pleadings and evidence adduced at the hearing before the Panel on 3, 4, and 7 June 2021. Additional facts and allegations found in the Parties' written submissions, pleadings and evidence may be set out, where relevant, in connection with the legal discussion that follows. While the Panel has considered all the facts, allegations, legal arguments and evidence submitted by the Parties in the present proceedings, it refers in its Award only to the submissions and evidence it considers necessary as part of its reasoning.

7. Mr Leeper started competing in official para-athletic events in 2009 and achieved great success. In 2012, he competed in the London Paralympics, winning a silver and a bronze medal in the 400m and 200m events, respectively. In 2013, he won silver medals in the 100m, 200m and 400m races. He was also a member of the gold medal winning 4×100m relay team in the International Paralympic Committee ("IPC") World Championship.

8. In 2015, the IAAF Council decided to leave open the possibility for amputee athletes to compete in the same classification as able-bodied athletes, but to place the burden on them to establish that their RSPs did not give them an overall competitive advantage.

9. From June 2017 onwards, Mr Leeper started competing against elite able-bodied athletes in the 400m event at competitions organised by WA's member federations.

10. In June 2018, WA informed the USA Track & Field ("USATF"), Mr Leeper's federation, that Mr Leeper had not established that he did not gain a competitive advantage using the blades with which he competed. At that time, Rule 6.3.4 disallowed *"[t]he use of any mechanical aid, unless the athlete can establish on the balance of probabilities that the use of an aid would not provide them with an overall competitive advantage over an athlete not using such aid"*, thereby placing the burden of proof on the athlete. WA therefore deemed illegal all the results achieved by Mr Leeper in competitions conducted under the WA Rules. It requested USATF to notify Mr Leeper accordingly. In the same month, the USATF relayed the relevant information to Mr Leeper, and also informed Mr Leeper that the IPC and World Para Athletics ("WPA") had issued in 2017[3] a revised height certification requirement based on a new method of calculating the Maximum Allowable Standing Height ("MASH"), the MASH rule[4]. It requested Mr Leeper to submit his 2018 MASH height certification to USATF, in connection with Mr Leeper's eligibility to compete in the 2018 USATF Track and Field championships.

11. This correspondence prompted Mr Leeper to apply to WA in July 2019 for a ruling that his RSPs that gave him a standing height of 189.2 cm (6'4") were allowable under Rule 6.3.4 as it

[3] In October 2015, the IPC/WPA announced that a new method of calculation for determining the MASH for athletes with bilateral lower-limb amputations competing with RSPs would be introduced on 1 January 2017. In 2017, the IPC/WPA decided to postpone the implementation of the revised MASH rule until 1 January 2018 to give all athletes the opportunity to present themselves for official measurements prior to adapting their personalised equipment.
[4] The MASH rule was and is still used by the IPC/WPA to calculate the natural standing height of Paralympic track and field athletes with unilateral or bilateral amputations.

then stood (the "2019 Application"). On 18 February 2020, WA denied Mr Leeper's 2019 Application, on the basis that he had failed to discharge his burden of proof to establish, on the balance of probabilities, that his RSPs would not provide him with an overall competitive advantage over an athlete not using such RSPs.

12. On 27 February 2020, Mr Leeper appealed to the CAS against WA's decision (*"Leeper I* proceedings"). In those proceedings, Mr Leeper argued that:

- Rule 6.3.4 unlawfully placed a burden on him to establish that he does not derive an overall competitive advantage from the use of his RSPs.

- The Rule was discriminatory, both in effect and in intent, because it applied only to athletes who use a mechanical aid, without which they would not be able to compete at all. It did not apply to able-bodied athletes, who are not subject to any pre-eligibility burden to prove that they do not have any overall competitive advantage. It was incumbent upon WA to demonstrate that the discriminatory Rule was reasonable and proportionate.

- The exercise of assessing, under Rule 6.3.4, whether an amputee athlete would receive an *"overall competitive advantage"* required a comparison between the disabled athlete wishing to use the mechanical aid (here, Mr Leeper) and an able-bodied athlete not using such an aid.

- The application of the MASH rule, an issue first raised in WA's Answer dated 1 June 2020, was irrelevant because it (i) was not adopted by WA, (ii) did not apply outside para-athletics, i.e. events in which disabled athletes compete against non-disabled athletes, and (iii) was not scientifically validated by reference to Black athletes of African descent.

- There is no support for the proposition that running taller enables Mr Leeper to run faster than would otherwise be the case.

- In any event, he had established, on the balance of probabilities, that his RSPs did not provide him with an overall competitive advantage.

13. WA in response contended as follows:

- A ban on mechanical aids exists to protect the integrity of sport because it ensures that the outcome of competition is determined by natural talent and effort and not technology. It was therefore entitled, under Rule 6.3.4, to require the person seeking an exception to the ban (here, Mr Leeper) to establish that the exception sought will not threaten that integrity.

- There is a difference between differential treatment and unlawful discrimination. Treating athletes differently is lawful if it serves as a necessary, reasonable and proportionate means of achieving a legitimate objective. Rule 6.3.4 was a necessary,

reasonable and proportionate means of achieving the legitimate objective of preserving a level playing field.

- Rule 6.3.4 has only one logical and workable interpretation, namely that an *"overall competitive advantage"* should be assessed by comparing a disabled athlete's performance while using the mechanical aid in question with the performance the same athlete would have been able to achieve if he or she had intact biological limbs.

- There is a direct relationship between leg length and running.

- Mr Leeper was running on anatomically disproportionate blades, i.e. 15 cm longer than his natural height calculated using the MASH formula, which formula is based on best available science. His RSPs therefore enabled him to run *"unnaturally tall"*.

- Mr Leeper was not able to establish that the height of his blades gave him no overall competitive advantage.

14. In an award dated 23 October 2020, the *Leeper I* panel held, notably, that:

- *"[T]he Rule* [sc. Rule 6.3.4] *is unlawful and invalid insofar as it places the burden of establishing the absence of an overall competitive advantage on the athlete who is seeking to use a mechanical aid … [T]he part-provision of the Rule which imposes the burden of proof on the disabled athlete (which the Panel has found to be unlawful) shall be '*deemed deleted*' from the Rule … Accordingly, it follows that [WA] bears the burden under the Rule of establishing that Mr. Leeper (or any disabled athlete who wishes to use prosthetic aids in order to run against able-bodied athletes) derives an overall competitive advantage from the use of the particular prosthetic aid"*.

- *"[W]hile the Rule is neutral on its face (in the sense that it applies to all athletes equally and irrespective of any disability) the practical effect of the Rule is likely to be significantly greater for disabled athletes than able-bodied athletes …. In these circumstances, the Panel concludes that the Rule is indirectly discriminatory"*.

- *"[T]he only logical and workable construction of the Rule is one that requires a comparison to be undertaken between (a) Mr. Leeper's performance in the 400m event while using his RSPs to overcome his lack of fully intact biological legs; and (b) Mr. Leeper's likely performance in the 400m event had he been born with fully intact biological legs which did not necessitate the use of RSPs in order to run"*.

- *"The Panel accepts that the MASH rule does not govern eligibility to compete in* [WA-sanctioned] *events. Indeed, there are no rules that prevent athletes who are taller than a certain height or who have limbs that exceed certain proportions from competing in* [WA-sanctioned] *events. It does not follow from this, however, that the MASH rule is irrelevant to the question at hand. On the contrary, the Panel considers that the MASH rule provides an objective and reliable indication of Mr. Leeper's likely maximum height if he had intact biological legs …. It follows from this that, since Mr. Leeper's RSP enable him to run at a height which is significantly taller than his MASH, Mr. Leeper is indeed running unnaturally tall"*.

- *"Having carefully considered all the evidence, the Panel concludes that the WA's experts are correct when they state that there is a direct relationship between leg length and running speed".*

- *"[T]he Panel concludes that* [WA] *has established on a balance of probabilities that the particular RSPs used by Mr. Blake Leeper give him an overall competitive advantage in the 400m event over an athlete not using such a mechanical aid and that, accordingly, Mr. Leeper may not use his particular RSPs in the 400m event in the Olympic Games or* [WA] *Series competitions".*

15. Mr Leeper's appeal in respect of the *Leeper I* award to the Swiss Federal Tribunal was dismissed on 2 June 2021.

16. As noted, Mr Leeper submitted a second application to WA in December 2020 seeking permission to use new RSPs that give him an overall standing height of 185.42 cm (the "2020 Application"). These new RSPs are identical to the RSPs that were the subject of his 2019 Application save that they are approximately 5 cm shorter. As also noted above, the MAR panel rejected Mr Leeper's 2020 Application on grounds that his new RSPs provided him with an *"overall competitive advantage"* because they enabled him to run unnaturally tall.

IV. THE PRESENT PROCEEDINGS BEFORE CAS

17. On 30 April 2021, Mr Leeper filed his Statement of Appeal with the CAS against WA with respect to the MAR panel decision, nominating Dr Ucheora Onwuamaegbu as an arbitrator. Pursuant to Article R52(4) of the CAS Code, Mr Leeper also requested an expedited hearing of the appeal, with the operative part of the award to be rendered before 10 June 2021. Mr Leeper agreed subsequently to postpone this deadline by one day, i.e. 11 June 2021.

18. On 3 May 2021, Mr Leeper informed the CAS Court Office that he wished for his Statement of Appeal to be considered as his Appeal Brief pursuant to Article R51 of the CAS Code.

19. On 12 May 2021, WA nominated as arbitrator The Hon Dr Annabelle Bennett AC SC.

20. On 21 May 2021, the CAS Court Office, on behalf of the President of the Appeals Arbitration Division, confirmed the constitution of the Panel as follows:

President:	Dr Georgios Petrochilos QC, Attorney-at-Law in Paris, France
Arbitrators:	Dr Ucheora Onwuamaegbu, Attorney-at-Law in Washington, D.C., United States of America
	The Hon Dr Annabelle Bennett AC SC, Barrister in Sydney, Australia

21. On 24 May 2021, WA filed its Answer and supporting evidence.

22. On 25 May 2021, Ms Zara Desai, Attorney-at-Law in Paris, France, was appointed as *ad hoc* Clerk in these proceedings.

23. On 31 May 2021, a pre-hearing conference was held between the Panel and the Parties to discuss the organisation of the hearing. At the conference, the Panel:

- Directed the Parties to brief the question whether the holdings of the *Leeper I* panel (i.e. holdings made with respect to the particular issues identified in those proceedings as well as the final disposition) were *res judicata* between the Parties;

- Informed the Parties that the experts will be examined in witness conferencing (also known as a "hot tub"). It accordingly directed the Parties' experts to confer in advance of the hearing and submit an agreed list of issues to be determined by the Panel in relation to expert evidence, with any points of disagreement listed separately. If the Parties' experts were not able to confer ahead of the hearing, the Parties were instructed to submit such a list;

- Directed the Parties to submit an agreed list of issues to be determined by the Panel in the present proceedings.

24. On 2 June 2021, WA signed and returned the Order of Procedure in this matter.

25. On 2 June 2021, the Panel circulated to the Parties a list of issues that the Panel wished the Parties to address during the hearing.

26. On the same day, WA informed the Panel that the Parties were unable to arrange a conference among their experts to identify points agreed and points in dispute. The Parties were also unable to reach agreement on the list of issues to be discussed during witness-conferencing. Thus, WA circulated its understanding of the points in dispute and points that it considered capable of garnering agreement between the experts at the hearing. WA also submitted its own proposed list of issues to be decided by the Panel.

27. Mr Leeper also submitted his proposed list of issues on 2 June 2021 and requested that the lists submitted by WA be disregarded on grounds of being argumentative.

28. In its decision of 2 June 2021, the Panel determined that WA's list of issues to be determined by the Panel was in the nature of argument and, in consequence, to be disregarded. It directed that WA's proposed list of points for hot-tubbing be communicated to both sides' experts so that they can each consider whether the *"points potentially capable of agreement"* are indeed points of agreement or disagreement. The Panel also noted that it would bear in mind the points submitted by the Parties in formulating its own questions to the experts.

29. On 3 June 2021, Mr Leeper signed and returned the Order of Procedure in this matter.

30. On 3 and 4 June 2021, a hearing was held by video-link. The Panel was assisted by Ms Zara Desai, *ad hoc* clerk, and Mr Giovanni Maria Fares, Counsel to the CAS, and joined by video-link by the following legal counsel or party representatives:

<u>For Mr Leeper:</u>

- Mr Blake Leeper
- Mr Jeffrey L. Kessler
- Mr David Feher

- Ms Angela Smedley
- Ms Mathilde Lefranc-Barthe
- Mr Michael J. Stepek
- Mr Brandon Annette
- Mr Scott Sherman
- Mr Drew Washington
- Mr Malik Williams
- Mr Caleb Washington
- Ms Ece Yagci

For WA:

- Mr Jonathan Taylor QC
- Mr Chris Lavey
- Ms Karena Vleck
- Mr Vijay Parbat

31. The Panel heard evidence from both sides' experts in three separate hot-tubbing sessions. Mr Leeper's experts included Prof Alena Grabowski, Dr Hugh Herr, and Dr Owen Beck. WA's experts included two teams. The first team comprised Profs Peter Weyand and Matthew Bundle. The second team comprised Prof Sean Tweedy and Drs Mark Connick and Emma Beckman (together, the "University of Queensland Experts" or "UQ Experts"). The Panel had access to the written expert reports submitted by both sides' experts in these proceedings as well as those submitted in the *Leeper I* case.

32. At the conclusion of the hearing, both Parties confirmed that they were *"content with the procedural handling of the case"* and had no *"objections or complaints"* in respect of the procedure.

33. On 7 June 2021, WA sought the Panel's leave to make a post-hearing submission on the issue of the burden of proof on proportionality (this being an issue raised by the Panel during the hearing on 4 June 2021).

34. Both WA and Mr Leeper filed post-hearing briefs on 8 June 2021, as directed by the Panel.

35. On 8 June 2021, the Panel reconvened with the Parties via video-link to hear their closing submissions. Also, the Panel asked:

- *"[T]he Appellant to address the question whether the relief he seeks is either (a) to be granted/rejected in its entirety or (b) subject to modification at the discretion of the Panel"*;

- *"[B]oth Parties to address the question of proportionality, namely the possibility that the strict application of Rule 6.3.4 may not be justified as meeting the test of proportionality in this particular case, but there are other ways, short of disallowing the Appellant's participation in WA-sanctioned events, through which proportionality may be served"*.

36. Mr Leeper stated that in the circumstances he would not oppose an extension by one day of the 10 June 2021 deadline for delivery of the operative part of the Panel's decision, i.e. to 11 June 2021. At the conclusion of the hearing, each of the Parties confirmed that they had *"no objections as to the proceedings"* to date.

V. SUMMARY OF PARTIES' SUBMISSIONS AND EVIDENCE

A. Mr Leeper

37. Mr Leeper's submissions may be summarized as follows.

38. *Leeper I* panel's findings of fact and reasoning have no *res judicata* effect in these proceedings.

- Under applicable Swiss law, only the operative part of an award is *res judicata* between the Parties. Neither a tribunal's findings on fact nor reasoning can have *res judicata* effect. Furthermore, a prior decision cannot be *res judicata* between the Parties in respect of new facts. A panel may only regard a prior panel's fact findings and reasoning as authoritative if it considers them to be persuasive and relevant to the facts and evidence in the subsequent proceedings.

- The *Leeper I* decision is not *res judicata* in the present proceedings.

  - First, the only aspect that is *res judicata* is the operative part of the *Leeper I* award, which stated, *inter alia*, that *"the* particular *running specific prostheses used by Mr. Blake Leeper give him an overall competitive advantage over an athlete not using such a mechanical aid"*. Any of *Leeper I* panel's findings on fact or reasoning are not *res judicata.*

  - Second, the present proceedings involve new facts and evidence that could not be raised in *Leeper I*. They concern a different rule (Rule 6.3.4 as amended in 2020), RSPs of a different height, new evidence resulting from tests conducted in Dallas in 2021, and new expert testimony about those tests.

39. In determining whether a disabled athlete using a mechanical aid has an advantage, Rule 6.3.4 requires a comparison between a disabled athlete using the mechanical aid (in this case, Mr Leeper) and other able-bodied athletes not using such an aid. It does not require a comparison between the disabled athlete using mechanical aid and the performance that same athlete would be capable of achieving at his or her natural height (i.e. if she or he had intact biological lower limbs).

40. WA has not met its burden to show that Mr Leeper's new RSPs enable him to run *"unnaturally tall"*.

- WA bears the burden of establishing that, on a balance of probabilities, Mr Leeper's shorter RSPs give him a competitive advantage over able-bodied athletes. In order to discharge its burden, WA calculated Mr Leeper's natural height using the MASH rule, which it determined to be no more than 174.44 cm (5'9"). As Mr Leeper's current RSPs

are set to 185.43 cm (6'1"), the WA concluded that Mr Leeper was running *"unnaturally tall"*.

- The use of the MASH rule, however, is not appropriate to calculate Mr Leeper's natural height.
    - The MASH rule governs the use of RSPs by disabled athletes competing against other disabled athletes. It has not been adopted for, and does not apply to, WA competitions between disabled and able-bodied athletes.
    - The MASH rule cannot reliably calculate the natural height of athletes of African descent because it is racially discriminatory. It is not based on any data from Black athletes but exclusively on data from Caucasian and Asian populations. However, as scientific literature confirms, and WA concedes, persons of African ancestry have longer limbs in proportion to their torso than Caucasian or Asian populations.
    - To justify the use of the MASH methodology for Black athletes, WA tested it against anthropometric data from photographs of twelve Black athletes published in a study by Dr J M Tanner in 1964. These photographs cannot be relied on because they are 60 years old, are two-dimensional, do not allow for proper palpitation, and concerned an unreasonably small sample size. Even if these photographs were considered reliable, the MASH rule underpredicted the standing height of two of these twelve Black athletes.

41. Even if Mr Leeper's RSPs enable him to run *"unnaturally tall"*, WA cannot show that this *"unnatural"* running height provides Mr Leeper with an *"overall competitive advantage"*.

- WA's experts, Profs Weyand and Bundle, argue that there is a direct relationship between leg length and maximum running speed. However, they have conducted no population study to date to prove that hypothesis. On the other hand, the Taboga 2020 study (the "Taboga 2020 Paper" or "Taboga 2020 Study") demonstrated that there was no direct relationship between the height of the RSPs and maximum running speed. That study measured the top treadmill speed of five double-amputee athletes wearing RSPs of different stiffness and height. The results showed that the height of the RSPs had no significant effect on top speed. The athlete wearing the tallest RSPs ran slower at the increased height while the athlete with shorter RSPs was able to achieve the same speed with a 3 cm decrease in height compared to his MASH.
- To prove their hypothesis, Profs Weyand and Bundle tested Mr Leeper's performance on his new RSPs at the Southern Methodist University Laboratory in Dallas in February and March 2021 (the "Dallas tests"). They then compared the results of those tests with the results of the tests conducted by Mr Leeper's experts in Boulder in 2018 to gauge Mr Leeper's performance on his older, longer RSPs (the "Boulder tests"). After comparing the results of both tests, WA's experts reached a conclusion that Mr Leeper's competitive performance was based on his height because his running performance was

slower on his new, shorter RSPs than on his prior, taller RSPs. However, their conclusions are unreliable because the Dallas tests were conducted by self-interested experts and were ridden with *"serious accuracy issues"*.

- Far from enjoying any competitive advantage, Mr Leeper faces a substantial overall disadvantage compared to able-bodied athletes in the 400m event. His RSPs prevent him from exerting maximal force at the starting blocks, resulting in deceleration and reduction in speed over the first 100m. They also confer a disadvantage in speed on the curves of the track.

42. If the Panel concludes that WA has met its burden of proof in establishing that Mr Leeper has an overall competitive advantage on his RSPs, the Panel should then consider proportionality in its decision, i.e. whether the sanction of prohibiting Mr Leeper from competing in his RSPs at their current length would be excessive and disproportionate in this particular case. In the Athlete's view, Rule 6.3.4 as interpreted by WA to bar completely Mr Leeper from competing on his RSPs with able-bodied athletes is grossly disproportionate to any legitimate objective. It is disproportionate because Mr Leeper is currently not able to compete at a lower height without risking injury. In addition, he relied on the fact that, prior to 2018, the MASH rule permitted him to compete at a greater height. He did so because WA gave no warning to Mr Leeper or any other disabled athletes that the MASH rules would even apply to WA events until the appeal proceedings before the CAS in *Leeper I* in 2020.

Mr Leeper

43. Mr Leeper provided witness testimony at the hearing.

44. He began his testimony by describing his experience of growing up as a child born with fibular hemimelia, a congenital birth defect which resulted in him being born without most of his calf muscles, shin bones and feet.

45. Mr Leeper described his personal background and upbringing. He grew up in East Tennessee and wore his first prosthetics at nine months of age. He recounted how his doctors told his parents that he would never be able to walk, and sports would not be an option. He also movingly spoke about how, through the support from his family and community and access to technology, he has been able to live a fulfilled life. He also tried to play sports as a child, such as basketball, tee-ball and baseball.

46. He testified that, being a disabled Black man, he has been discriminated against his whole life. However, he continued fighting such discrimination through the support of his family and by finding his true purpose in life. He developed his dream of being an Olympic runner by watching Paralympians such as Messrs Oscar Pistorius, Jerome Singleton, and Marlon Shirley running in the 2008 Paralympic Games. Since then, he worked as hard as he possibly could to make that dream a reality.

47. He explained that he started using his RSPs to run in 2011 and has been running on that height ever since. However, his running times have not been the same since he started running

in 2011. He started out slow, at 50 seconds. He worked with his coaches, trained smarter as an athlete, made sacrifices and dedicated his life to improve his running performance. He eventually achieved his finish time of 44 seconds.

48. Mr Leeper confirmed that he has never competed on his post-2018 MASH height. However, he tried to train at that height for *"about 10 days"* but injured himself. He explained that he *"threw out* [his] *back"* and that running at that height *"didn't feel comfortable"* and *"natural"*. After the *Leeper I* decision, he decided to lower his RSPs to the point where he could still be comfortable and avoid injury. Going any lower *"would compromise not only* [his] *physical structure"*, making him susceptible to injury, but also *"would feel completely unnatural and uncomfortable"*.

49. Mr Leeper also described his fitness condition at the time of the Dallas tests. He testified that he was unable to train properly in 2020 because of the COVID-19 pandemic. Los Angeles at that time was under complete lockdown and all running tracks associated with universities were closed. Mr Leeper would therefore train in parking garages and available grass fields until he reached Dallas. He was also forced to compete in local races against slower athletes, which affected his finishing times. In addition, the Dallas tests took place in the pre-season phase when neither Mr Leeper nor other elite athletes had run any races. The Boulder tests, on the other hand, were conducted when Mr Leeper was in his best shape, having run a full season of races and broken his own personal best time. He emphasised that he was not in peak shape when he reached Dallas.

50. He then gave testimony concerning his training difficulties in Dallas. Mr Leeper explained that Dallas was hit by a major snowstorm right after he reached the city. He was snowed in for several days and had no access to training facilities. His attempts at running on a treadmill were also without success due to power cuts. While in Dallas, his diet suffered greatly as restaurants and grocery stores were forced to shut and he had to survive on ready-to-eat food from the pharmacy. He explained that, prior to the tests, he informed Professor Weyand, one of WA's experts conducting the tests, about the difficult conditions that he faced. However, he claimed that his complaints were not taken seriously. Not only was he not in his best shape, he was also made to run in extremely windy conditions. The cross winds and head winds significantly affected his performance during the Dallas tests.

51. Finally, Mr Leeper told the Panel that, by running on his RSPs, he is *"at a pure disadvantage"* at the starting blocks. When the gun goes off, the other *"runners blow past [him]"*. Similarly, running on the curves, which constitutes about half or more than half of a 400m race, is *"extremely tough"*. The blades are designed *"to go straight"* –when they hit the curve, they create resistance and *"want to go back to the straight position"*. He would therefore *"physically have to slow down around the curve to avoid running out of* [his] *leg"*. Mr Leeper mentioned that he also experiences other physical disadvantages in using the RSPs that are not experienced by able-bodied athletes. He said that *"at any point in time, my leg can fall off"*. He also stated that the use of RSPs causes infections where his stumps connect to the RSPs.

52. In cross-examination, Mr Leeper was asked questions about his experience of running on his current RSPs, and, in particular, the time it took him to acclimatise to the new blades. Mr Leeper explained that it has been a *"day by day process"* and that he is *"still learning to this day"* to

run on shorter blades. Even though they are only 5 cm shorter, they feel "*foreign*", "*weird*" and *"unnatural"*. When asked about when he started running on shorter blades, Mr Leeper responded that he started "*last year*" but could not remember the exact date. When asked about how he and his coaches decided that he cannot run safely at any shorter height, he said that *"changing any height would be a risk"* and that he cannot *"put[] [himself] at harm during Olympics"*. He also testified that he is progressively getting into better shape, although he is still not in peak shape.

53. At the conclusion of the hearing, Mr Leeper delivered a closing statement. He began by emphasising that he is an elite athlete who has a dream to not only compete but also to be the best in the world, regardless of his disability. He explained that he has been training extremely hard to reach that goal, despite attempts by others to diminish his talent and determination because of the height of his blades. He concluded by saying that his success is not due to his height but to his work ethic, drive, determination, strategy, and rhythm. He wants to be a true Olympic athlete and has worked hard to be in a position to represent his country on an international level.

Relief claimed by Mr Leeper

54. In his Statement of Appeal, Mr Leeper sought the following relief:

"For all of the reasons set forth herein and supported by the attached exhibits, Mr. Leeper respectfully requests that this Tribunal reverse World Athletics' denial of his Application and find him eligible to compete in all World Athletics-sanctioned events using his new RSPs, such that his results are listed alongside those of able-bodied athletes, and so that, if he achieves the necessary qualifying times, he will be eligible to participate in the Tokyo Olympics and other World Athletics Series competitions going forward".

B. WA

55. WA's submissions may be summarized as follows.

56. *Leeper I* panel's award is *res judicata* in these proceedings.

- The general principle of law of *res judicata* applies in these proceedings. As WA's rules and regulations apply globally, the Panel should apply *"general principles of law drawn from a comparative or common denominator reading of various domestic legal systems"* in these proceedings, and not Swiss law. One such general principle is the doctrine of *res judicata*, which is also recognised by Monaco law, the law applying subsidiarily to the substance of the present dispute.

- Even if the Panel considers Swiss law as applicable, Swiss law does not limit *res judicata* only to the dispositive section of the award. Instead, it allows a court or a panel to consider reasons in interpreting the meaning and scope of the operative part of the decision. In any event, CAS panels have discretion to ignore limits placed on the *res judicata* doctrine by national laws where such limits are not *"compatible with other*

fundamental and widely recognized procedural principles such as the principle of certainty and the principle of economy".

- The *Leeper I* decision's findings and rulings are *res judicata* between the Parties. A prior decision is *res judicata* if the parties, claims and relief sought in the subsequent proceedings are identical. This triple identity test is met in this case. These proceedings concern the same Parties, the interpretation of the same rule, the same arguments by the Parties, and the same evidence. Even the basic facts underlying the Dallas tests were before the *Leeper I* panel. The only difference in these proceedings is the height of the RSPs in question. Therefore, none of the rulings made by the *Leeper I* panel can be revisited.

- Even if the Panel decides that the reasoning and rulings in the *Leeper I* award are not *res judicata*, then, according to CAS jurisprudence, they at least carry substantial precedential value. Accordingly, Mr Leeper would have to submit persuasive arguments and evidence to justify departing from *Leeper I*, but he has not done so.

57. As the *Leeper I* panel held, Rule 6.3.4 requires a comparison between the disabled athlete who wishes to use a mechanical aid and the performance that same athlete would be capable of achieving if they had intact biological legs. It does not require a comparison between the disabled athlete and elite able-bodied athletes that she or he wants to compete against.

58. WA has properly demonstrated that Mr Leeper, on his new RSPs, is still running unnaturally tall.

- WA accepts that it has the burden to show that, on the balance of probabilities, Mr Leeper's new RSPs do not provide him with an overall competitive advantage.

- As the *Leeper I* panel held, WA's use of the MASH rule to calculate Mr Leeper's natural height is appropriate.

    - There is a strong scientific basis for using the MASH rule to predict the standing height of persons belonging to different races, including athletes of African descent. The fact that Black athletes have slightly different body proportions is of no consequence. The amount of anthropometric variation between different human populations is very small to begin with. The MASH rule as applied by the WPA is able to cope with these small variations because the equation it uses[5] predicts height based on the measurements of a number of different body parts, not just one. For a double transtibial amputee like Mr Leeper, it uses weighted measurements of sitting height (where measurements of Caucasian populations are longer)[6], femur length, forearm length, and upper arm length (where measurements of Black populations are longer). These differences offset one

[5] The MASH rule that has been in place from 2018 onwards uses a regression equation developed by Dr Alicia Canda in 2009, called "Canda-1".
[6] The length of an athlete's trunk, also known as "sitting height", measured from the vertex of the head to the supporting surface on which a person is sitting erect.

another. For any normal variation, the MASH rule applies a 1.91 cm correction factor. The MASH rule overestimates height in the vast majority of cases (82%) and underestimates height in only a few cases (18%) marginally (average -1.2 cm).

- Because the Canda-1 equation used in the post-2018 MASH rule was derived from a Spanish Caucasian population, Connick *et al* conducted a study to test this equation in different human populations. Leading authorities on anthropological science have confirmed that the natural biological variation that occurs between individual human beings is driven by variation in genetic makeup, not race. Connick *et al* therefore tested the validity of the Canda-1 equation by choosing samples from locations that were geographically distant from Spain, i.e. Japan and Australia. They found that the Canda-1 equation provided the most valid estimations of standing height across Japanese and Australian samples. The fact that the Canda-1 equation worked in two distinct populations with a wide range of body proportions is strong evidence that the equation could be reliably used for other populations with significantly different body proportions, including people of African descent.

59. Running taller than his natural height provides Mr Leeper with an overall competitive advantage.

- There is a direct relationship between height and maximum running speed. As Profs Weyand and Bundle have explained, an athlete's maximum sprinting speed is determined, in significant part, by contact length (i.e. the forward distance that the body travels when the foot is in contact with the ground), which in turn is determined by leg length. The longer your legs, the further you move forward each time you make contact with the ground, and the faster you run as a result. If a double-amputee sprinter's RSPs increase their leg length, this will increase their contact length, and as a result enhance their sprinting speed. The *Leeper I* panel agreed with their analysis.

  - The Dallas tests, which were conducted properly, confirmed that Mr Leeper's maximum speed on his new RSPs (10.9 m/s) was slower than his maximum speed on his old RSPs calculated in Boulder in 2018 (11.4 m/s).

  - The Taboga 2020 Study presented by Mr Leeper does not provide any reliable support for the proposition that an increase in RSP height can have no effect on running speed. It was based on a sample size of only five athletes and did not control for potentially confounding factors such as the model and stiffness of the prostheses. In any event, certain of the results from the Taboga 2020 Study are in fact consistent with the proposition that an increase in RSP height results in an increase in running speed.

- Any disadvantages experienced by Mr Leeper due to his use of RSPs do not offset the overall competitive advantage he obtains through their use.

- It is common ground that Mr Leeper's RSPs compromised his acceleration out of the starting blocks. However, WA disagrees with Mr Leeper on the reason behind such deceleration. The deceleration at the starting blocks was not caused because Mr Leeper used RSPs but because his RSPs were disproportionally tall. This disproportionate length meant that Mr Leeper had to start the race more vertically than his able-bodied competitors. WA also disagrees with Mr Leeper on the magnitude of the resulting disadvantage, which is 0.5 second rather than 1.41 seconds predicted by Mr Leeper's experts. This disadvantage would, in any event, be offset by faster running later in the race due to energy savings at the start.

- Mr Leeper experienced no disadvantage on the curves by running on RSPs, not even 0.4 second as quantified by Mr Leeper's experts. This was confirmed by actual race data and the Dallas tests, which indicated that his running speeds around the curves were similar to the performances of able-bodied athletes not running on RSPs.

- In any event, Mr Leeper's alleged disadvantages would be offset by the competitive advantage that he did enjoy, which WA quantified in Dallas at 4.9 seconds. Therefore, even if full allowances were made regarding the existence and quantum of these alleged disadvantages, Mr Leeper still retained a net overall competitive advantage of 2.9 seconds.

60. WA bears the burden of establishing that Rule 6.3.4 is a necessary and proportionate means of attaining a legitimate objective. WA has proven that the legitimate purpose of Rule 6.3.4 is to safeguard the fairness and integrity of competitive athletics by ensuring that the outcome of WA competitions is determined by the competitors' natural talent, training and effort, and not by the use of mechanical aids which confer an artificial advantage over athletes not using such aids.

- Rule 6.3.4 (as re-written) does not go further than necessary to achieve the legitimate objective. Rule 6.3.4 has a limited impact on Mr Leeper's eligibility to compete. He is only barred from competing in four events – the quadrennial Olympic Games and the biennial World Outdoor Championships, World Indoor Championships, and World Relay Championships. He may still compete in all other WA-sanctioned international-level events (with results listed separately) or national events (without restriction).

- It has never been Mr Leeper's case that, while Rule 6.3.4 is a necessary, reasonable, and proportionate means of achieving a legitimate objective, the way in which it operates in this particular case is disproportionate. Even if that were his case, the burden is on him to show that Rule 6.3.4 is disproportionate in his specific case. He has not met that burden.

Relief claimed by WA

61. In its Answer, WA sought the following relief:

"For the reasons set out above, World Athletics respectfully asks this CAS Panel:

8.1.1 to dismiss Mr Leeper's appeal in its entirety, without granting him any relief;

8.1.2 to order Mr Leeper to pay the arbitration costs falling within CAS Code Article R64.4, including reimbursing World Athletics for the 30,000 Swiss francs that it has been required to advance to date on account of such costs.

8.2 Given that Mr Leeper does not seek to shift any of his legal costs to World Athletics, World Athletics in turn is content to bear its own legal costs and therefore does not seek an order requiring Mr Leeper to contribute to the payment of those costs".

VI. JURISDICTION

62. Article R47 of the CAS Code provides as follows:

"An appeal against the decision of a federation, association or sports-related body may be filed with the CAS insofar as the statutes or regulations of the said body so provide or as the parties have concluded a specific arbitration agreement and insofar as the Appellant has exhausted the legal remedies available to him prior to the appeal, in accordance with the statutes or regulations of the said sports-related body".

63. Rule 3.1 of the WA's Disputes and Disciplinary Proceedings Rules provides in material part:

"This Rule 3 relates to any legal dispute of any kind whatsoever arising between World Athletics on the one hand and any Member, Area Association, athlete, athlete support personnel or other person who is subject to the Constitution and/or any of the Rules or Regulations on the other hand, in relation to the Constitution and/or any Rule or Regulation and/or any World Athletics decision or act or omission, howsoever arising, that is not covered by the dispute resolution provisions of the Constitution or any Rules or Regulations (each, a 'Dispute'). Subject to, and in accordance with Article 84 of the Constitution, a Dispute shall be submitted to arbitration before the CAS (Ordinary Arbitration Division or Appeal Arbitration Division, depending on the circumstances of the case), to the exclusion of any other court or forum".

64. Both Parties agree that the CAS has jurisdiction over this appeal. The Parties confirmed CAS's jurisdiction by signing the Order of Procedure.

65. The Panel is, therefore, satisfied that it has jurisdiction over this appeal.

VII. ADMISSIBILITY

66. Article R49 of the CAS Code provides as follows:

"In the absence of a time limit set in the statutes or regulations of the federation, association or sports-related body concerned, or of a previous agreement, the time limit for appeal shall be twenty-one days from the receipt of the decision appealed against. After having consulted the parties, the Division President may refuse to entertain an appeal if it is manifestly late".

67. The MAR panel decision was issued on 26 April 2021. The Statement of Appeal was filed four days later, on 30 April 2021.

68. WA accepts that Mr Leeper's appeal was filed within the time-limit and is therefore admissible.

69. The Panel is, therefore, satisfied that this appeal is admissible.

VIII. APPLICABLE LAW

70. Article R58 of the CAS Code provides as follows:

> *"The Panel shall decide the dispute according to the applicable regulations and the rules of law chosen by the parties or, in the absence of such a choice, according to the law of the country in which the federation, association or sports-related body which has issued the challenged decision is domiciled or according to the rules of law, the application of which the Panel deems appropriate. In the latter case, the Panel shall give reasons for its decision".*

71. Article R28 of the CAS Code provides that *"[t]he seat of CAS and of each Arbitration Panel ('Panel') is Lausanne, Switzerland"*. Article 176 of the Swiss Private International Law Act ("PILA") provides that it *"appl*[ies] *to arbitral tribunals that have their seat in Switzerland"*.

72. Article 187 of the Act provides that *"the arbitral tribunal shall rule according to the law chosen by the parties"*.

73. In both their oral and written submissions, the Parties have expressly referred to and relied upon the WA Constitution, WA Competition Rules, WA Technical Rules, and WA Disputes and Disciplinary Proceedings Rules. WA also relies on *"general principles of law drawn from a comparative or common denominator reading of various domestic legal systems"* and, subsidiarily, upon the law of Monaco.

74. The Panel concludes that the law applicable to the merits is the WA Constitution, the WA Competition Rules, WA Disputes and Disciplinary Proceedings Rules (all in force from 1 November 2019) and WA Technical Rules (in force from 1 November 2019 and amended on 31 January 2020). There is no need to resort to Monegasque law given that it does not have any bearing on the Panel's conclusions and reasoning below.

75. Regarding the application of general principles of law, the Panel notes that prior CAS panels have held that, given the *"transnational character of international sporting competitions"* and *"the global effects of the actions and omissions of international federations"*, national and international sports federations must conform to *"a set of unwritten legal principles – a sort of* lex mercatoria *for sports or, so to speak, a "*lex ludica*"* or *"*lex sportiva*"* (CAS 98/200, para 156; CAS 2014/A/3776, para 269). Such general principles may include *"general principles of law drawn from a comparative or common denominator reading of various legal systems"* (CAS 98/200, para 156), such as *"fairness"*, *"good faith"*, *"prohibition of arbitrary rules and measures"*, "venire contra factum proprium*"*, *"non-retroactivity of laws"*, *"the right to be heard"*, and *"proportionality"* (CAS 98/200, para 158). The only exception to their application is if *"such general principles were in conflict with some national or transnational public policy provision applicable to a given case"* (CAS 2014/A/3776, para 269; CAS

2002/O/410, paras 4, 11; CAS 2014/A/3776, para 164; CAS 2015/A/3944, para 67). Accordingly, the Panel considers that general principles of law are also applicable to the present dispute as *"rules of law* [whose application] *the Panel deems appropriate"* under Article R58 of the CAS Code.

76. As to matters of procedure, the procedural rules of the CAS Code are applicable (R27 of the CAS Code), supplemented if need be in a manner consistent with mandatory rules of Swiss law, given that these proceedings are seated in Switzerland by virtue of R28 of the CAS Code.

IX. STANDARD OF REVIEW

77. Article R57 of the CAS Code provides, in part:

"The Panel has full power to review the facts and the law. It may issue a new decision which replaces the decision challenged or annul the decision and refer the case back to the previous instance".

78. WA submits that, by virtue of this provision, this Panel is not restricted to deciding whether the MAR panel decision under appeal is wrong. Instead, it envisages a full *de novo* hearing of the merits of the case. Mr Leeper does not dispute this.

79. Accordingly, in accordance with Article R57 of the CAS Code, the Panel shall conduct a *de novo* determination of Mr Leeper's eligibility to compete on his current RSPs.

X. MERITS

80. On the basis of the Parties' requests for relief and the submissions advanced before the Panel in writing and orally, the Panel considers it helpful to identify the following issues as arising for determination:

- What is the effect of the *Leeper I* award on these proceedings?
- What is the proper comparator for assessing whether Mr Leeper, through his use of RSPs, has or does not have an *"advantage"* over an able-bodied athlete not using RSPs?
- Is the height of RSPs used by double-amputee runners determinative of their athletic performance, such that height can be regulated under Rule 6.3.4?
- Does Mr Leeper suffer disadvantage by running on RSPs, such as to offset an advantage conferred by the height of his RSPs?
- Is Mr Leeper running above his natural height on his current RSPs?
- Is there a less-intrusive alternative to altogether disallowing Mr Leeper's RSPs in WA-sanctioned events?

A. The effect of the *Leeper I* award on these proceedings

81. The Parties disagree on whether the *Leeper I* panel's award is *res judicata* in these proceedings. Mr Leeper claims that, under the applicable Swiss rules, the *Leeper I* panel's findings of fact and reasoning have no *res judicata* effect in these proceedings as they concern new facts and evidence, i.e. the use of shorter RSPs and expert evidence resulting from the Dallas tests. Nevertheless, WA contends that the general principle of *res judicata*, also recognised by Monegasque law, applies to these proceedings, and by virtue of it, rulings made by the *Leeper I* panel are *res judicata*. Alternatively, WA claims that, even if Swiss law is to be regarded as applicable, this requires the Panel to give *res judicata* effect to the *Leeper I* panel's findings of fact and reasoning.

82. Neither party denies that *res judicata* is a principle of Swiss (procedural) public policy, which must be respected by an arbitral tribunal seated in Switzerland on pain of annulment under Article 190(2)(e) PILA.

83. The Panel notes that, under Swiss law, *res judicata* has two aspects, which are interrelated but separate: a negative aspect (i.e. that a claim finally adjudicated cannot be relitigated) and a positive or affirmative aspect (i.e. that a final adjudication of a claim must be respected in subsequent litigation). In both instances, *res judicata* applies only when the *"parties"* and the *"object of the dispute"* (i.e. the claims and relevant factual circumstances) are identical to those in the previous proceedings.

84. Mr Leeper argues that the present claim is different from that in *Leeper I* because it concerns RSPs of a different height, and thus no *res judicata* effect is to be given to *Leeper I*. WA, for its part, does not contest that these proceedings concern RSPs of a different height. However, it argues that the present proceedings concern the same Parties, the interpretation of the same rule, the same arguments by the parties and substantively the same evidence. Therefore, WA submits, the reasoning and the rulings in the *Leeper I* award are *res judicata* in these proceedings. In the alternative, the *Leeper I* award carries substantial precedential value, according to CAS jurisprudence.

85. The Panel agrees with Mr Leeper that the present claim is different from that in *Leeper I*, involving as it does RSPs of a different height and being directed against a different technical panel decision below. The *Leeper I* award does not, therefore, have a negative *res judicata* effect in these proceedings, i.e. it cannot prevent the adjudication of the present claim.

86. As to the potential affirmative *res judicata* effect of the *Leeper I* award, the operative section of that award is not of itself dispositive in the present case because, again, the specific claim in *Leeper I* concerned different RSPs. Nevertheless, in order to arrive at its ultimate decision, the *Leeper I* panel made a number of intermediate findings, including regarding the interpretation of an earlier version of Rule 6.3.4 and the MASH rule. The question, therefore, is whether the construction of Rule 6.3.4 and the application of the MASH rule adopted in *Leeper I* are to be regarded as part of the claim that was disposed of in *Leeper I*, such that these holdings would be binding on the Parties in the present proceedings. If the object of *Leeper I* is taken as the permissibility or otherwise of RSPs of a specific height, and nothing more, then intermediate

rulings of the *Leeper I* panel are not covered by *res judicata*. By contrast, if the object of *Leeper I* is to be regarded as being (or at least as including) the proper construction of Rule 6.3.4 and the applicability of the MASH rule, then findings on these issues are binding.

87. As the Panel has had the benefit of the Parties' pleadings and full argument on the matters in issue, the Panel has been able to form its own view on those matters. There is no dispute that, under CAS jurisprudence, the reasoning of the *Leeper I* panel is to be carefully considered. The Panel agrees with that reasoning so far as relevant in the present case, and sets out in its own reasons the basis of that agreement. Accordingly, it is unnecessary to consider further the application, or otherwise, of *res judicata*.

B. The proper construction and scope of application of Rule 6.3.4

88. It is common ground that Mr Leeper, by competing in athletics on the international level, is bound by WA Competition and Technical Rules[7].

89. WA Technical Rule 6.3.4 provides, in relevant part:

> *"For the purpose of this Rule, the following examples shall be considered assistance, and are therefore not allowed:*
>
> *The use of any mechanical aid, unless on the balance of probabilities the use of an aid would not provide them* [sc. athletes using such aids] *with an overall competitive advantage over an athlete not using such aid".*

90. Rule 6.3.4 prohibits *"*[t]*he use of any mechanical aid"* that provides an athlete with an *"overall competitive advantage"*. It is common ground between the Parties that RSPs constitute *"mechanical aids"* within the meaning of Rule 6.3.4. The Panel will therefore approach the case on this agreed basis.

91. The Panel must determine two issues regarding the interpretation and application of Rule 6.3.4. First, what the appropriate comparator is for assessing whether a non-able-bodied athlete has an *"advantage"* over another athlete (whether able-bodied or not). Secondly, whether the height of a double-amputee athlete's RSPs affects their athletic performance and can accordingly be regulated under Rule 6.3.4.

a. The notion of "advantage" *under Rule 6.3.4*

92. Mr Leeper submits that Rule 6.3.4 requires a comparison to be made between the disabled athlete who wishes to use RSPs and his/her actual competitors – in Mr Leeper's case, any able-bodied athlete of elite world-class level not using RSPs. The Rule does not require, Mr Leeper argues, a comparison between the athlete who wishes to use RSPs and the performance that the same athlete would be capable of achieving if she or he had intact biological legs.

[7] Rule 100 of the WA Technical Rules provides that *"[a]ll International Competitions, as defined in the Generally Applicable Definitions, shall be held under the Rules of World Athletics"*. WA's Generally Applicable Definitions define "*International Competitions"* as, *inter alia*, *"[c]competitions included in the World Athletic Series"* and *"[t]he Athletics programme of the Olympic Games"*.

This, Mr Leeper contended, was consistent with the natural meaning of the language of the Rule. And no other interpretation is practicable, as it is impossible to know how an amputee athlete like Mr Leeper would perform if he had intact biological legs. In Mr Leeper's case, the Rule requires a comparison between his height and the height at which elite, world-class able-bodied male athletes of African descent run in 400m events. Mr Leeper presented the height data of top-ranked Black sprinters and claimed that those athletes ran as tall or even taller than Mr Leeper. Based on this information, he argues that the height of his RSPs did not give him a competitive advantage over other athletes.

93. WA submits that the Rule has only one logical, principled and workable construction. The notion of *"advantage"* requires a comparison between Mr Leeper's performance on his RSPs and the performance he would have been able to achieve if he had intact biological legs. This interpretation of the Rule flows directly from its purpose, namely, to protect the integrity and fairness of competition by preventing athletes from using mechanical aids that do more than simply to compensate for the disadvantage caused by their disability.

94. As noted, the *Leeper I* panel held at paragraph 310 of its award that:

"[T]he only logical, principled and workable construction of the Rule is one that, in the case of disabled athletes who use a mechanical aid to overcome a disability, requires a comparison to be undertaken between the athlete's likely athletic performance when using the mechanical aid and their likely athletic performance had they not had the disability which necessitates the use of that aid".

95. At the hearing, the Panel sought clarification from the Parties on whether Rule 6.3.4 applies to all athletes (able-bodied and disabled alike) or only to disabled athletes. The Parties advanced divergent positions. Mr Leeper argued that Rule 6.3.4 applies only to disabled athletes, because it prohibits the use of an *"aid"*, which is *"something you need to compete"*. Rule 6.3.4 must be distinguished from Rule 6.4.4, which is designed to prohibit *"any technology or appliance"* capable of providing an athlete with an advantage. WA disagreed, submitting that, although Rule 6.3.4 may more frequently apply to disabled athletes than to non-disabled ones, it applies to all athletes.

96. In this respect, the *Leeper I* panel held that *"[o]n its face, the Rule applies equally to all athletes; it draws no distinction between able-bodied athletes and athletes with a disability"*. This is in contrast to *"the eligibility rules that were the subject of the challenge in* Chand *(which expressly applied only to female athletes) and in* Semenya *(which expressly applied only to athletes who were recognised at law as female or intersex)"*.

97. The Panel agrees with the *Leeper I* panel that, while *"the practical effect of the Rule is likely to be significantly greater for disabled athletes"*, the plain language of the Rule does not distinguish between able-bodied athletes and disabled athletes. The implication of this is as obvious as it is important. One must be careful not to construe Rule 6.3.4 as permitting aids which compensate for an athlete's anatomic features to the point of equiparating an athlete's competitive potential with the top athlete in the relevant discipline. Rule 6.3.4 cannot have the effect of allowing for an *"arms race"* to alter natural limitations in athletics.

98. Accordingly, the Panel is unable to accept the view that one must take as the comparator the height of elite competitors not running on RSPs. In a discipline such as Mr Leeper's, the anatomy of an athlete is a factor in performance. Anatomy is taken as an unalterable fact of nature: there is no form of equalisation for anatomical features that may affect an athlete's performance. Leg length is one such feature (as discussed below). If the Panel were to accept Mr Leeper's view, then Rule 6.3.4 would allow athletes, both disabled and able-bodied, to use mechanical aids that alter their anatomy to emulate their competitors' innate anatomical features and thus compensate for limitations resulting from their own anatomical features.

99. The Panel is unable to accept a reading of Rule 6.3.4 that would lead to such an outcome. The Panel, therefore, concludes that, in applying Rule 6.3.4 to an athlete such as Mr Leeper (who must run on RSPs if he is to run at all), the notion of *"advantage"* must be assessed by reference to Mr Leeper's natural height, i.e. his height had his legs been intact below the knee.

b. The effect of RSP height on competitive performance

100. The next question is whether an increase in the height of an amputee athlete's RSPs beyond his/her natural height (i.e. one's height had one had intact biological limbs) is capable of providing the athlete with a performance advantage, and can, therefore be regulated under Rule 6.3.4.

101. The Parties' experts agree on the basic mechanics of running speed. They agree that running speed is equal to the distance travelled per unit of time and involves ground reaction forces and contact lengths (i.e. the forward distance the body travels while the foot is in contact with the ground).

102. However, the experts disagree on whether the length of a double-amputee athlete's RSPs affects ground contact length, and, as a result, directly affects their competitive performance in sprint running.

103. Mr Leeper's experts opined that WA's experts are wrong to suggest that prosthetic length directly affects maximum speed. Increases in the height of RSPs do not increase ground contact length and running velocity, because there are other biomechanical factors (e.g. forces and step-frequencies) that change speed. Dr Herr stated during the hearing that *"running is a dynamic and complex activity"*. In the words of Dr Beck, the matter is *"[n]ot as simple as shorter or longer ground contact length"*.

104. In order to substantiate their view, Prof Grabowski and her team presented in their Expert Report of 26 March 2021 the results from the Taboga 2020 Study, which *"is the only study ever published that systematically changed prosthetic height and studied its effect on the running biomechanics and top speed of athletes with bilateral transtibial amputations"*. In that study, the authors measured the treadmill-running top speed of five athletes with bilateral transtibial amputations, each running on three different RSPs (different models, different stiffness levels, and different heights). They increased the RSP height used by one of the participants by up to 16 cm. That participant ran 1.1 m/s slower with a 10 cm increase, 1.8 m/s slower with a 12 cm increase, and 2.8 m/s slower with a 14 cm increase. Similarly, the authors increased RSP height for another

participant by up to 7 cm. That participant ran 1.4 m/s slower using 2 cm taller RSPs and ran 1.25 m/s faster using 3 cm shorter prostheses. Based on these results, Prof Grabowski and her colleagues concluded that there was no significant relationship between prosthetic height and maximum speed.

105. In addition, Dr Herr claimed that the notion that an increase in leg length increases speed has never been proven in a scientific, peer-reviewed study. It also lacks scientific vigour because it assumes that all other factors are held constant, while there are many other variables that can affect an amputee athlete's performance if their RSPs are lengthened. (For instance, if the height of the RSPs is increased, then they become heavier, which slows down maximum velocity.) He said that WA's experts have not taken such variables into account.

106. For its part, WA submits that height should be regulated under Rule 6.3.4 because longer legs are indeed advantageous to sprint-running performance, and such advantage can be quantified. According to Profs Weyand and Bundle, the scientific understanding of the mechanical basis of sprint running confirms that there is a direct relationship between limb length and maximum sprinting speed. They expressed the basis of this relationship in mathematical terms, explaining that the *"most critical determinant"* of the maximum sprinting speed that an athlete can attain (i.e. an athlete's performance over a 400m race) is *"the minimum time of foot-ground contact"*. Since running speed is equal to the distance travelled per unit of time, a runner's speed can be expressed as the distance their body travels while their foot is in contact with the ground ("ground contact length") divided by the duration of that contact ("ground contact time"). The ground contact length of an athlete is a close function of the length of their legs: the longer a runner's legs, the further forward the runner moves each time they make contact with the ground. For most runners, contact lengths are generally equal to or slightly longer than their leg lengths. Therefore, all things being equal, a lengthening of the leg results in a direct increase in ground contact length.

107. In their Expert Report of 5 April 2021, Prof Tweedy and Dr Connick opined that the data in the Taboga 2020 Paper do not prove that RSP height has no effect on maximum speed. They pointed out that the authors of that paper considered *"a small sample size"*, used *"an inappropriate statistical technique"*, and misinterpreted the results. The study also included confounding factors. For example, the subjects ran on RSPs of length and stiffness they were used to in only one of the 15 configurations tested. But an amputee athlete may take a while to familiarise ("acclimatise") himself or herself with different height, models and configuration of the RSPs. Indeed, that was Mr Leeper's justification in *Leeper I* for not being able to shorten his RSPs. If one removes this confounding factor of unfamiliarity and only looks at the maximum speed achieved by each subject when using her usual RSPs at the usual stiffness, then, of the three heights investigated (0, +2 cm and +4 cm), four out of five athletes achieved maximum speed when running at +2 cm or +4 cm. While cautioning that the evidence from these limited data *"should be interpreted cautiously"*, Prof Tweedy and Dr Connick concluded that *"the direction of the effect is the opposite to that declared by the authors [of the Taboga 2020 Paper]"*, tending to support the hypothesis that increased RSP length permits higher maximum velocity.

108. WA's experts also testified that, in addition to the experimental data in the Taboga 2020 Paper, observational evidence also demonstrates that an increase in leg length increases maximum

speed. Prof Tweedy and Dr Connick examined the data of three of the eight bilateral transtibial amputee finalists from the 400m race at the Rio 2016 Paralympic Games after these athletes were required to decrease the lengths of their blades by several inches, under the MASH rule put in place in 2018. They noted that the maximum speed of these runners dropped by up to six seconds after reducing the height of their RSPs. Similarly, Profs Weyand and Bundle compiled height data for the best 45 individual performers over a 14-year period in Olympic running events over distances between 100m and 3,000m. Their data showed that the best individual performers in all sprint events *"exceed the sex-specific height norms of the larger population"*, meaning that *"being taller and having longer legs clearly is advantageous for sprint running"*. They added that the magnitude of the advantage derived from increased height and leg length *"becomes larger as the duration of the sprint race increases"*.

109. Given these experimental and observational data, Profs Weyand and Bundle examined whether a decrease in the height of Mr Leeper's RSPs resulted in a decrease in his top speed. They noted that, during tests in Boulder in 2018, Prof Grabowski had measured Mr Leeper's maximum speed on his 5 cm taller RSPs (giving Mr Leeper a leg length of 109 cm) at 11.4 m/s. Based on their mathematical formula, Profs Weyand and Bundle predicted that a 5 cm decrease in the height of Mr Leeper's RSPs would lead to a drop in maximum speed of 0.5 m/s, to 10.9 m/s. They tested this hypothesis at tests in Dallas in 2021, which, they claimed, confirmed that Mr Leeper's maximum speed was 10.9 m/s on his 5 cm shorter RSPs. In this way, they confirmed that leg length directly affects an athlete's maximum speed.

110. WA's experts claimed that, as a corollary, the height of RSPs should be controlled under Rule 6.3.4. This is because increasing the length of RSPs can give an athlete a longer stride length. Non-amputee runners, by contrast, are unable artificially to increase the length of their lower limbs in order to increase their stride length. As a result, the use of RSPs by a double-amputee runner such as Mr Leeper may confer an advantage that is both *"unnatural"* and *"unfair"* and should therefore be assessed under Rule 6.3.4. In that connection, Prof Weyand disagreed with Mr Leeper's experts that the additional weight of lengthier RSPs will decrease speed. On the contrary, the light carbon-fibre material that RSPs are made of enables sprinters to reposition their limbs in 20% less time than a non-amputee runner, an enormous advantage for sprinting. Prof Tweedy and Dr Connick also questioned the existence of any peer-reviewed studies proving that mass affects top speed.

111. Mr Leeper's experts, for their part, disagreed that non-amputee runners cannot change their running height. In their Expert Report of 26 March 2021, they submitted that, as biomechanics govern running performance, the effect of leg- or RSP length should be assessed when an athlete is running and not when they are standing. Non-amputee runners can lengthen their legs during running through plantar flexion, i.e. by pointing away their toes. By lengthening their legs in such a way, non-amputee runners can contact the ground earlier. Passive RSPs used by amputee runners cannot flex in the same way. To test this hypothesis, Prof Grabowski and her team experimentally compared the biological and prosthetic leg lengths of seven athletes with unilateral transtibial amputation. They recorded the biological and prosthetic leg length of each athlete at touchdown, midstance, and take-off. They concluded that non-amputee runners can lengthen their leg prior to ground contact by

approximately 6 cm. In addition, non-amputee athletes can race with permitted ("sanctioned") shoes that have 2 cm-thick soles, increasing their overall running leg length.

112. Having considered the evidence before it, the Panel accepts the evidence of WA's experts that, all things being equal, leg length is a factor that affects a runner's maximum speed. The Panel considers persuasive the scientific evidence offered by WA's experts to the effect that a direct relationship exists between leg length and running speed. It accepts that a significant component of a runner's potential top speed is their contact length, which is determined by their leg length (see *supra* at para 106). The Panel also acknowledges that this direct relationship is reflected in the observational evidence put forward by WA's experts. The population data presented by Profs Weyand and Bundle of the 45 best 400m sprinters over a 14-year period of Olympic running events show that the top performers (male and female) were taller and had longer legs compared to the general population (see *supra* at para 108). This shows that leg length plays at least some role in enhancing a runner's performance.

113. Both Parties agree that the Taboga 2020 Paper is the only experimental study that collates data on the effect of RSP height on an athlete's maximum speed. The Parties disagree on the cogency of the design of the study and the conclusions drawn by the authors. Profs Grabowski and Taboga, and Dr Beck relied on the Taboga 2020 Paper in support of the proposition that the height of an athlete's RSPs does not determine their maximum speed in a 400m event. However, the Panel notes that the Taboga 2020 Paper involved changing not just the height of the RSPs but also the model and stiffness of the RSPs. As Prof Tweedy explained, *"an experiment that gives high quality evidence is one where you have got* […] *experimental control"*. To produce reliable results, the Taboga 2020 Study should have manipulated only one variable, i.e. height of the RSPs. The Panel accepts Prof Tweedy and Dr Connick's evidence that, when only height is manipulated (i.e. when the subjects used their usual model of RSPs, at the usual stiffness), four out of five subjects attained their best maximum speed running at +2 cm and +4 cm. Therefore, the Panel accepts Prof Tweedy's view, namely that the conclusion that leg length affects maximum velocity is *"as strong as any conclusion"* one can draw from the Taboga 2020 Paper.

114. The Panel also notes that there were other confounding factors in the Taboga 2020 Study. For instance, the subjects in study were not given time to familiarise themselves with running at taller heights. This appears to be a significant weakness. Runners using prosthetics need at least some time to get acclimatised to new RSP heights. Prof Weyand gave the example of Mr Alan Oliveira, a Paralympian athlete from Brazil, who stated that it took him at least two weeks to get used to his lengthened RSPs before the 2012 Paralympics, after which he was able to run much faster. The Panel also recalls that one of the main justifications offered by Mr Leeper for being unable to run at his MASH height was because he was not able to acclimatise himself (see *supra* at para 48). Similarly, he gave witness evidence that running on his 5 cm shorter RSPs still felt unnatural and uncomfortable, after months of using them (see *supra* at para 52). An adjustment/acclimatisation period was not accounted for in the Taboga 2020 Study.

115. The Panel is unable to draw any conclusions regarding the expert testimony presented by Mr Leeper on the effect the increased weight of longer RSPs may have on running speed. The Panel has not been offered any published, peer-reviewed scientific evidence specifically

showing that the incrementally greater weight materially affects a double-amputee runner's maximum velocity. Similarly, the Panel is not able to assess the unpublished, non-peer-reviewed study of Prof Grabowski's team on the ability of non-amputee runners to increase their leg length through plantar flexion. That study was conducted with athletes with unilateral transtibial amputation, a specific class of athletes with different gait mechanics and performance abilities, rather than non-amputee athletes.

116. The Panel is also unable to accept Profs Weyand and Bundle's comparative analysis of Mr Leeper's performance in Boulder (on longer blades) and in Dallas (on shorter blades). Those tests were designed differently from each other and were conducted under different testing protocols and conditions, as both sides' experts acknowledged. For example, Prof Weyand agreed that Mr Leeper's performance in top-speed treadmill trials were recorded in Boulder and Dallas using different testing methods at each location. For the sake of clarity, the Panel does not intend to cast any doubt on the validity of the Boulder and Dallas tests taken individually. Scientists design their tests differently, based on their own training and experience. But, given the differences between the two tests, the Panel is unable to draw safe conclusions by comparing those two tests. To establish a true and reliable comparison, one would need to measure Mr Leeper's top speed on both heights in tests designed and conducted using the same methodology.

117. For the above reasons, the Panel concludes that it is a legitimate purpose to employ Rule 6.3.4 to control height conferred through the use of RSPs.

C. Whether Mr Leeper's proposed RSPs give him an overall competitive advantage

118. The next question is whether WA has established, on a balance of probabilities, that the specific RSPs chosen by Mr Leeper confer, through extra length, an overall competitive advantage that he would not have had if he had intact biological legs. As part of this inquiry, the Panel needs to determine two issues. First, whether Mr Leeper suffers any disadvantages by running on RSPs, and if so, whether such disadvantages outweigh any performance advantage he may have. Secondly, whether Mr Leeper is running above his natural height on his current RSPs.

a. The existence of any overall disadvantage of running on RSPs

119. Mr Leeper contests WA's claim that he has an overall competitive advantage over able-bodied athletes in the 400m event. He contends that, far from enjoying any such advantage, he suffers a net disadvantage by running on RSPs, which disadvantage must be weighed against any alleged advantage he may have. Mr Leeper's experts claimed the following:

- He has a disadvantage at the starting blocks: while able-bodied athletes can use muscular power in their legs and ankles to push out of the blocks, Mr Leeper's RSPs prevent him from exerting maximal force at the start. Due to this biomechanical disadvantage, he begins every race at an immediate disadvantage compared to his able-bodied competitors. Prof Grabowski and her team tested Mr Leeper's performance at the

starting blocks during the 2018 Boulder tests and quantified his acceleration disadvantage at 1.41 seconds.

- He has a disadvantage when running on the curves, as Mr Leeper's RSPs are designed for straight-running movement and not curved movement. This places him at a disadvantage when running around the curves of a track, which make up about half of the 400m race. Prof Grabowski and her team quantified this disadvantage at 0.4 second.

120. WA's experts agreed that Mr Leeper accelerates more slowly than able-bodied athletes at the starting blocks. However, they disagreed on the cause and magnitude of this disadvantage.

- Referring to video footage of Mr Leeper racing against his competitors, they claimed that Mr Leeper's amputee and non-amputee competitors are able to lean forward and push more horizontally at the starting blocks. By contrast, Mr Leeper's disproportionately long RSPs require him to assume a more upright position as the block-push commences, lest he lose balance. This vertical position reduces the amount of force he is able to exert on the starting blocks. Therefore, Mr Leeper's disadvantage results from the disproportionate length of his RSPs, which impedes him from exerting immediate maximal force. It is not caused by an inherent limitation of RSPs as his experts claim.

- According to WA's experts, the Dallas tests confirmed that Mr Leeper's use of shorter RSPs reduced his disadvantage substantially.

- WA's experts disagreed with Prof Grabowski's team regarding the extent of the disadvantage. They quantified Mr Leeper's disadvantage at 0.5 second, as opposed to 1.41 seconds predicted by Mr Leeper's experts. WA's experts also claimed that Mr Leeper benefits from a slower, lower exertion start. The gradual acceleration at the start leaves him less fatigued and enables him to run faster in the second part of the race.

121. WA's experts claimed that Mr Leeper does not have any disadvantage on the curves. To prove their point, they first relied on actual race data from World Championships in Seville (1999), Berlin (2009) and London (2017) of 23 performances by some of the most accomplished 400m runners in the world. Although Prof Grabowski claims that Mr Leeper has a 0.4 second disadvantage on the curves, he is in reality the fifth-fastest person among these 23 performances to complete the second turn of the 400m race. Notably, the data show that the current 400m World Record holder and the 2004 400m Olympic gold medallist are both slower than Mr Leeper during this curved portion of the race. They also tested Mr Leeper's curve-running in Dallas, which indicated that his running speeds around the curve (3.8% slower) than on straight segments are similar to the performances of non-amputees (~3.0% slower). This superiority of Mr Leeper's curve-running ability is made possible by the effect his lengthened limbs have on his top running speed.

122. WA's experts go on to say that even if one accepts that Mr Leeper has a cumulative disadvantage of 1.8 seconds in a 400m race, his overall advantage would still outweigh that disadvantage. The results of the Dallas tests showed that the 10 cm difference between Mr

Leeper's MASH height and his current RSPs leads to a difference in top speed of 1.0 m/s, which equates to an advantage of 4.7 seconds over 400m. Therefore, even discounting the disadvantage that Mr Leeper's experts claim he has, his overall advantage would still be 2.9 seconds over 400m.

123. WA's experts also claimed that bilateral transtibial amputees running on RSPs on the whole have an advantage over non-amputees. In their Expert Report of 31 May 2020, WA's experts, Profs Weyand and Bundle, referred to the all-time Paralympic 400m list for male transtibial amputees (both unilateral and bilateral) to show that the fastest seven athletes were all bilateral transtibial amputees. They claim that these performances provide compelling evidence of the overall or net competitive advantage that bilateral amputees have in sprint-running events. While their RSPs slow their sprint starts to an extent, the degree to which they dominate this list would be unattainable if their blades did not provide them with an advantage that more than offsets the modest disadvantage at the start. The same is true in Mr Leeper's case. The variables on which Mr Leeper's experts' conclusion is based do not indicate a single source of advantage for Mr Leeper; yet, Mr Leeper's personal record is faster than 99.88% of the elite non-amputee 400m runners. These data are at odds with Mr Leeper's experts' conclusion that bilateral transtibial amputees experience a disadvantage compared with non-amputee athletes.

124. According to the UQ Experts, evidence from a range of different sources provides reasonably strong support for the hypothesis that Mr Leeper's RSPs give him a performance advantage over athletes not using such RSPs.

- RSPs are specifically designed for running fast, and have several design features to optimise running performance.

- In general, RSPs are much lighter than biological limbs. As a result, they *"are easier to swing through the air due to their decreased inertia compared to biological legs"*. The lightweight design of RSPs has previously been highlighted as a possible factor in Mr Pistorius's ability to reposition his limbs during the swing phase of sprinting to achieve exceptionally high step-frequencies. In addition, it takes less force and less work to accelerate a small mass, and it is possible that lighter limbs may enhance running economy, which is the amount of energy required to maintain a given speed. Mr Leeper's RSPs weigh 2.5 kg in total, which is a lower mass and weight advantage of 57% compared to an intact limb.

- RSPs are made of carbon fibre and do not fatigue as biological legs do during a 400m race. It is plausible that this feature of RSPs may enhance performance.

- An important feature of all RSPs is that, compared to biological legs, athletes have the option of improving running performance by customising the features of their RSPs (design, weight, materials, and length). Non-amputee athletes do not have this option. And with the exception of length, RSP customisation is largely unregulated by sporting authorities.

125. The Panel notes that it is common ground that RSPs may slow down a runner at the starting blocks (although the experts disagree as to the cause and extent of that disadvantage). It is disputed whether they may slow down a runner on the curves, compared to a runner on biological legs. In support of their respective positions, both sides' experts have relied on experimental evidence from both the Boulder and the Dallas tests. As noted at paragraph 116 above, the Panel declines to draw any conclusions by directly comparing the results from the Boulder and Dallas tests. Those tests were conducted using different testing protocols and under different testing conditions.

126. There is, however, observational evidence in the record that is relevant to the issue. In their Joint Supplementary Expert Report of 10 July 2020, WA's experts presented data on the split times for the second curve (between 200m and 300m) for Mr Leeper and 400m World Championship finalists from 1999, 2009, and 2017. These data show that Mr Leeper is the fifth-fastest runner to complete the second curve, ahead of non-amputee runners such as Mr Wayde van Niekerk (the current world and 2016 Olympic record holder in the 400m event), Mr Jeremy Wariner (former world champion and Olympic gold medallist in the 400m event), and Mr Steven Gardiner (2019 world champion in the 400m event). In the Panel's view, this evidence supports the assertion that Mr Leeper does not suffer a disadvantage on the curves compared to able-bodied runners.

127. There is also evidence in the record that Mr Leeper does not suffer an overall disadvantage compared to unilateral amputee runners, who are limited by their single biological legs. There is no dispute that double-amputee runners can readily adjust the individual features of their RSPs such as design, material, weight, and length. It is also undisputed that RSPs are much lighter than biological limbs and that they do not fatigue an athlete in the same way as biological legs do. Therefore, it appears that these features of RSPs, set at the discretion of a double-amputee runner, may enable him or her to offset any disadvantage he or she may suffer in a 400m race. In this regard, the Panel acknowledges the evidence submitted by WA's experts on the performance gap between bilateral transtibial amputees (who can adjust the individual features of both of their RSPs) and unilateral transtibial amputees (who can only do so by reference to their biological leg). The all-time Paralympic 400m list for male transtibial amputees shows that the fastest seven athletes are all bilateral transtibial amputees. The difference between the fastest time for a double amputee (Mr Leeper) and the fastest time for a unilateral amputee (Mr Michail Seitis) is 5.24 seconds – a considerable difference, even larger than the performance difference between male and female non-amputee 400m world-record holders. The Panel considers the extent of this performance difference as evidence that RSPs do provide an overall advantage to double-amputee runners, which more than offsets any disadvantages they may have.

128. According to Prof Grabowski, Prof Taboga, and Dr Beck, Mr Leeper obtains no advantage on his RSPs; he only suffers disadvantages. The Panel finds it difficult to reconcile this view with Mr Leeper's overall performance. The evidence before the Panel shows that Mr Leeper is able to achieve times quicker than 99.88% of the elite non-amputee 400m runners. The Panel agrees with the *Leeper I* panel (*Leeper I* award, para 374) that a range of factors may explain how Mr Leeper was able to achieve such times. It is possible that they are the result of natural talent, training, and sheer determination, meaning that Mr Leeper would be the

fastest 400m sprinter if he had biologically intact legs. However, it is more likely that Mr Leeper was able to achieve these times because his RSPs confer on him a net performance advantage, which more than counterbalances any disadvantage in respect of initial acceleration and curve-running.

129. On the totality of evidence before it, the Panel concludes that, overall, bilateral transtibial amputees like Mr Leeper do not suffer a performance disadvantage compared to non-amputee runners.

130. Given the Panel's finding that the height of RSPs is a factor that affects a runner's maximum speed (see *supra* at paras 112 and 117), the next question before the Panel is whether Mr Leeper is running above his natural height on his current RSPs.

D. Whether Mr Leeper is running above his natural height on his proposed RSPs

131. The new MASH rule, which was adopted in 2018, serves to calculate the maximum permitted length of RSPs used by double-amputee athletes. Beyond that length, a double-amputee athlete using RSPs is considered to be running unnaturally tall and, therefore, to have a disallowable advantage. Mr Leeper started competing against able-bodied athletes from June 2017 onwards. Accordingly, WA applied the MASH rule to Mr Leeper to determine his natural height. The USATF, effectively Mr Leeper's federation, also employs the same methodology, notably for Olympics-qualification races. It officially informed Mr Leeper in June 2018 that the IPC had issued a new MASH rule in January 2018 and that he would need to submit his revised MASH height certification in order to be eligible to compete in the 2018 USATF Track and Field championships. Thus, Mr Leeper had notice of the application of the MASH methodology to him since mid-2018 at the latest.

132. Using the MASH rule adopted by the IPC/WPA, WA calculated Mr Leeper's MASH at 174.44 cm. Accordingly, it claimed that Mr Leeper was running significantly taller on his new RSPs, which give him a height of 185.42 cm. Mr Leeper does not contest the arithmetic calculations, but he does contest the use of the MASH rule in the first place, on various grounds.

133. The Panel has carefully reviewed both Parties' evidence on the application of the new MASH rule, which it summarises below.

134. According to WA, the 2018 MASH rule is directly relevant to the question of whether Mr Leeper has an overall competitive advantage over non-amputee athletes, seeking as it does to ensure that Mr Leeper's RSPs do not enable him to run taller than would have been the case if his legs were intact.

135. Prof Tweedy and Dr Connick provided a detailed history of the MASH rule and its evolution in their expert reports and hearing testimony. The MASH rule has been used by the IPC/WPA, the global governing body for Paralympic athletics, since 1993. This rule regulates the height of RSPs used by bilateral lower-limb amputees so that they are proportionate in length to the rest of their body. It does so by predicting their natural height, i.e. the height bilateral-amputee athletes would have if their legs were intact, and by disallowing RSPs that

make them stand taller than their natural height. In this way, it safeguards competition integrity and ensures that double-amputee athletes (who can self-select the height at which to run) do not have an unfair advantage over non-amputee athletes (who are limited by the height of their biological legs), unilateral amputee athletes (who are limited by the height of their single biological leg), or other bilateral-amputee athletes.

136. The methodology of predicting height under the MASH rule has evolved over the years. Prior to 2017, the IPC/WPA MASH rule predicted natural height based on two upper body measurements: the demispan (the distance from the middle of the sternal notch to the tip of the middle finger) and forearm length. This methodology came under scrutiny at the 2012 Paralympic Games, when the bilateral-amputee athlete Mr Oliveira defeated Paralympic champion Mr Pistorius. Following the race, Mr Pistorius complained that *"[t]he regulations allow athletes* [to] *make themselves unbelievably high"* and that *"[w]e aren't racing a fair race"*.

137. In 2013 and 2014, Prof Tweedy and his team became aware of a study by Dr Alicia Canda that proposed a more reliable method for estimating height. Dr Canda measured the body segments of 545 anatomically intact Spanish Caucasian males and 502 anatomically intact Spanish Caucasian females using internationally accepted standards. From these measurements, she derived a series of 51 equations (27 for males and 24 for females), each of which used different combinations of body segments to estimate standing height. One of these 51 regression equations did not require the length of the lower leg to be known. According to the UQ Experts, this particular equation, called the "Canda-1" equation, can predict the height of double-amputee males with great accuracy. The "Canda-1" equation required summing four anatomical measurements (thigh length, upper arm length, forearm, and sitting height) after each of them was multiplied by an empirically determined co-efficient[8]. The Canda-1 equation is based on the well-established biological principle that, while there is considerable variability in the standing height of human beings, their height remains in proportion to the rest of their body. It therefore incorporates measures of both the torso (where, on average, a White subject will have a longer measurement) and limb segments (where on average a Black subject will have longer measurements) to obtain predictive accuracy. So, if a male has a shorter trunk and longer limbs (as do Black athletes), any disadvantage resulting from a shorter trunk would be offset by relatively longer measurements of their upper arm, forearm and thigh.

138. As the Canda-1 equation was derived from a Spanish Caucasian population, Prof Tweedy and Dr Connick conducted a study to determine whether *"it can be validly applied to predict standing height in geographically distant, genetically diverse populations"*. As noted in their Expert Report of 16 March 2021, they based their study on the scientific premise of the American Association for Physical Anthropology ("AAPA") that natural biological variations between individual human beings are caused by variation in genetic make-up. Human genetic variation is driven by geographic distance and not race. On this premise, the UQ Experts validated the Canda-1 equation in population samples from two locations that were geographically distant from Spain – Japan and Australia. For comparison, they also tested the upper-body method in these populations. According to the UQ Experts, the Canda-1 equation provided the most valid

[8] Canda-1 equation = -5.272 + (0.998 × sitting height) + (0.855 × thigh) + (0.882 × upper arm) + (0.820 × forearm).

estimations of standing height across Japanese and Australian samples. Their published study showed the following:

- The error of the estimated stature in the Australian population sample was not significantly different from the error of the estimated stature in the Japanese sample (probability value greater than 0.05). This was even though the Japanese males on average had a significantly shorter thigh length (41.5 cm) compared to the Australian males (45.5 cm), and were significantly shorter in standing height (168.1 cm) than their Australian counterparts (179.5 cm). Based on these data, the authors concluded that the Canda-1 equation could be used to predict height across different populations, including people with a different range of body proportions, such as people of African descent.

- The upper-body method under which double-amputee athletes were assessed prior to 2019 systematically over-estimated standing height by 7 cm. By contrast, the Canda-1 equation had a systematic bias of only 0.2 cm.

139. Based on Prof Tweedy and Dr Connick's scientific evidence, the IPC/WPA changed the MASH methodology from the upper-body method to the Canda-1 equation, with effect from 1 January 2018. The MASH rule adopted by the IPC/WPA adds a pure error factor of 1.91 cm to the height predicted by the Canda-1 equation to account for any natural biological variation[9]. According to the new MASH rule, Mr Leeper's natural height is 174.44 cm (172.53 cm before the pure error factor of 1.91 cm is applied).

140. To prove that the Canda-1 equation measures the standing height of Black athletes accurately, Profs Weyand and Bundle tested it against the data collated by Dr Tanner in his 1964 study titled *"The Physique of the Olympic Athlete"*. In that study, Dr Tanner collected two sets of data. First, in the Appendix of his study, he recorded the race and sitting height for each athlete from a total of 200 male athletes who competed either at the 1958 Commonwealth Games in Cardiff or the 1960 Olympic Games in Rome. Second, he included a sequence of three photographic plates for each one of a subset of 104 of the athletes. Profs Weyand and Bundle extracted the measurements of thigh, upper arm, and forearm lengths from the photographs of 100 out of 104 athletes, using photographic analysis. For the fourth measurement required for the Canda-1 equation, the sitting height, they relied on the measurements that Dr Tanner recorded in his Appendix for those 100 athletes. These included 76 White athletes, twelve Black athletes, and nine Asian athletes. The experts then input the required four measurements for these 100 athletes in the Canda-1 equation. They found that the Canda-1 equation predicted the height of all 100 athletes accurately, within an average of 2.8 cm. Specifically, the Canda-1 equation overestimated the height of ten out of twelve Black athletes. It underestimated the height of two Black athletes, by 0.2 cm and 1 cm respectively (once the pure error factor of 1.91 cm was applied).

141. WA's experts agree with Mr Leeper that Black athletes have different body proportions from White athletes. As noted above, Black athletes have longer limbs while White athletes have

[9] New MASH rule = -5.272 + (0.998 × sitting height) + (0.855 × thigh) + (0.882 × upper arm) + (0.820 × forearm) + 1.91 cm of pure error factor.

longer sitting heights. However, the magnitude of such anthropometric differences is very small. Dr Tanner's data underscore this fact. Dr Tanner quantified the differences between White and Black athletes in relation to their sitting height and leg length. He recorded an average difference of 1 cm in sitting height and an average difference of 3.2 cm in leg length (with a leg length to sitting height ratio of 0.90 in White athletes and 0.94 in Black athletes). By contrast, the leg length to sitting height ratio for Asian subjects was much smaller than was the case for White and Black athletes. Yet, as Prof Tweedy and Dr Connick showed, the new MASH rule predicted the stature of Asian subjects with accuracy. The new MASH rule mitigates any marginal anthropometric differences through the 1.91 cm pure error factor.

142. Finally, WA's experts argued that in practice the new MASH rule predicts accurately the standing height of Black athletes. Prof Tweedy's team reported that the MASH rule accurately predicted the height of Mr Marko Cheseto, a Kenya-born bilateral transtibial amputee athlete. Mr Cheseto's known biological height was 6'0" (182.88 cm). After both his legs were amputated following a frostbite incident, the new MASH rule predicted his natural height at 5'11.75" (182.14 cm). The rule, therefore, underpredicted Mr Cheseto's height by only 0.74 cm.

143. For his part, Mr Leeper contends that the IPC's/WPA's MASH rule is based on scientific studies that did not include as subjects any Black persons of African descent. Citing various studies, including the 1964 study by Dr Tanner, he argues that it is well-established in the scientific community that Black persons have different limb proportions than persons of other genealogical backgrounds, which differences affect the performance of these athletes in sprinting competitions. Therefore, it is *"scientifically unsound"* to state that Mr Leeper runs at an unnaturally tall height based on the MASH rule. In particular, Mr Leeper argues as follows:

- The MASH rule is based entirely on a study conducted with Spanish Caucasian subjects, in which not a single Black person was involved. The empirically defined co-efficients in the MASH rule were selected without using any morphological data from Black persons of African heritage. These percentages cannot mathematically account for the anthropometric differences that exist between Black persons and persons of other genealogical backgrounds.

- The rule was later validated in Japanese and Australian populations but not in a Black population. To apply the MASH rule to Black athletes, WA would have to conduct a study with Black subjects. Indeed, WA's experts agreed that it would be better to conduct such a population study. However, they instead rely on the photographs published in Dr Tanner's study to argue that the MASH rule reliably predicts the stature of Black athletes. Not only are these photographs 60 years old, they concern a small sample size of twelve Black athletes. In addition, WA's experts' reconstruction of measurements from these two-dimensional photographs is inaccurate and unreliable.

- Mr Leeper disagrees with the measurements used by WA's experts' in Mr Cheseto's example. He claims that Mr Cheseto stated in a radio interview that his pre-amputation height was 6'1" (185.42 cm), while his MASH-calculated height is 5'9" (175.26 cm). The

MASH rule, therefore, underpredicted Mr Cheseto's height by a full four inches (10.16 cm).

144. Mr Leeper's main complaint is that the new MASH rule was neither based on nor validated by reference to a population study involving Black athletes. The Panel acknowledges that the new MASH rule was derived from a dataset underlying an anatomical study of Caucasian male and female athletes published in 2009[10]. However, before being adopted by the IPC and the WPA, the Canda-1 equation underlying the MASH rule was validated in small groups of populations in Japan and Australia. The UQ Experts conducted this validation exercise on the scientific premise that geographic distance, not race, is the main driver of genetic variability in the bodily proportions of different populations. This premise, which is not contested by Mr Leeper, was established by the AAPA, the world's leading professional organisation for physical anthropologists. Based on this premise, the UQ Experts concluded that, as the MASH rule successfully predicted height in Japanese and Australian populations, two populations farthest from Spain, it would also successfully predict height in other geographically distant and genetically diverse populations, including people of African descent. In the absence of contrary evidence, the Panel accepts the scientific premise before it, along with the resulting conclusions advanced by the UQ Experts.

145. Mr Leeper claims that the MASH rule could only be considered sound if it had been validated specifically with reference to athletes of African descent. However, as noted in the preceding paragraph, the only scientific evidence before the Panel is that human genetic variation (which causes anthropometric differences) is driven by geographic distance, not race. Mr Leeper has not challenged the scientific validity of this evidence through affirmative evidence in these proceedings. Indeed, certain studies cited by Mr Leeper's experts have at least partially confirmed this premise. For instance, the study by Dr Cherice Hill (Leeper Exhibit 31) states that *"[r]ace is a sociocultural categorization not based on any single characteristic, trait, or gene. Thus, the human species cannot be strictly divided into biologic or genetic races"*. Therefore, according to the evidence before the Panel, the validation of the MASH rule on the basis of geographic distance is more methodologically apt than race-oriented validation.

146. Furthermore, the Panel notes that there is some evidence in the record which lends a degree of support to the proposition that the MASH rule predicts the lower-leg length of Black athletes reasonably accurately.

147. For instance, WA's experts provided anecdotal evidence that the MASH rule accurately predicted the natural height of Mr Cheseto, whose pre-amputation height was known. The Panel recognises that there is some disagreement between the Parties' experts on the measurement of Mr Cheseto's MASH and pre-amputation heights. While WA's experts state that Mr Cheseto's MASH height, as published in the WPA Classification Master List, is 5'11.75" (182.14 cm), Mr Leeper's experts claim that his MASH height is 5'9" (175.26 cm). The Panel is bound to accept Mr Cheseto's MASH height as published in the official records, which is 5'11.75" (182.14 cm). The experts also disagree on Mr Cheseto's pre-amputation

[10] Its validity for that segment of the world population is not being contested in these proceedings (or elsewhere, so far as the Panel is aware).

height. WA's experts state that Mr Cheseto's actual height was 6'00" (182.88 cm) whereas Mr Leeper's experts claim that it was 6'1" (185.42 cm). The Panel is unable to form a view on the actual, pre-amputation height of Mr Cheseto. However, even if the Panel were to accept Mr Cheseto's actual height as reported by Mr Leeper's experts, then the MASH rule underpredicts Mr Cheseto's height by 3.28 cm. This is in stark contrast to Mr Leeper, who seeks to use RSPs that give him an additional leg length of 10 cm compared to his MASH height.

148. The Panel also notes that there is partial evidence in the record, derived from Dr Tanner's data (both raw measurements and photographic analysis), that the MASH rule accurately predicts the height of Black elite athletes. The Tanner data showed that the Canda-1 equation overpredicted the height of ten of the twelve Black athletes and underpredicted the height of two Black athletes by a slight margin. Any disadvantage in the latter hypothesis would be offset by adding the 1.91 cm pure error factor in the MASH rule.

149. In the Panel's view, the key point about this body of evidence, limited as it is, is that it does not cast doubt on the MASH methodology, especially given the pure error factor of 1.91 cm. In Mr Leeper's case, his MASH height is 174.44 cm (5'9"), some 10 cm (2") lower than his height on his proposed RSPs. This is a considerable margin, more than five times the 1.91 cm error factor.

150. The Panel is accordingly satisfied, on the basis of the scientific evidence before it, that the MASH rule provides a reliable method of estimating standing height in geographically distant populations with different anthropometric proportions, including people of African descent. The Panel is also satisfied that Mr Leeper's proposed RSPs confer upon him a standing height comfortably beyond any margin of error that one might allow for on the evidence before the Panel.

151. Thus, on the evidence before it, the Panel concludes that WA has established, on a balance of probabilities, that, on his chosen RSPs, Mr Leeper is running approximately 10 cm taller than his natural height. Through this extra length, Mr Leeper's RSPs confer upon him an overall running-speed advantage that Mr Leeper would not have if he had biologically intact lower limbs.

152. The Panel notes, however, the consensus among the experts that it would be sound and desirable for the MASH rule to be specifically validated by reference to African athletes or athletes of African descent. The Panel strongly encourages WA to conduct such a population study as soon as restrictions related to the COVID-19 pandemic allow. The Panel also strongly recommends that, in conducting the study, WA considers how best to organise the work to avoid any suggestion of confirmation bias.

E. Proportionality considerations

153. The Panel has determined that Mr Leeper's chosen RSPs, through an extra length of 10 cm, give him an overall competitive advantage within the meaning of Rule 6.3.4 (see *supra* at paras 149–151). The Panel turns now to consider whether there is a less-intrusive alternative to disallowing Mr Leeper's chosen RSPs in WA-sanctioned events.

154. The panel in *Leeper I* determined the onus of proof as to the lawfulness or unlawfulness of the Rule. In that context, the panel considered the approach that the CAS panels had taken in *Chand* and *Semenya,* where it had been determined that, for a rule that discriminates on the basis of a protected ground, the burden of proof shifted from the athlete to the IAAF (now known as WA) to establish that the relevant regulation was necessary, reasonable and proportionate. The panel in *Leeper I* concluded that the same approach should logically apply in a case where a regulation promulgated by the IAAF discriminates unlawfully against athletes with disabilities. The *Leeper I* panel concluded at paragraph 317 of its award that, although the provisions of the Rule in issue, both in that case and here, *"apply to all athletes who wish to use mechanical aids during IAAF-sanctioned competitions, the Rule was enacted with the specific objective of regulating the ability of athletes with disabilities to participate in IAAF-sanctioned competitions while using mechanical aids to overcome the limitations that arise as a result of their disabilities"*. The panel continued, at paragraphs 318 and 319, to observe that while Rule 6.3.4 is not directly discriminatory on its face, it is indirectly discriminatory in its practical application, in that *"it is likely to affect a larger number and a much greater proportion of disabled athletes than able-bodied athletes"*.

155. That reasoning was not challenged before this Panel.

156. The panel in *Leeper I* then turned to the question of whether the Rule pursued a legitimate objective and concluded that it did, this being *"to ensure the fairness and integrity of competitive athletics by ensuring that the outcome is determined by competitors' natural talent, training and effort, and not by the use of mechanical aids which confer an artificial competitive advantage over athletes who are not using such aids"* (at para 332).

157. In that analysis, however, the panel observed that, in formulating the Rule, there was a *"lack of attention and concern regarding the impact of the Rule on the rights and interests of disabled athletes"* and, specifically, the IAAF did not enact a bespoke rule to deal specifically and directly with the position of disabled athletes who need to use prosthetic aids as a substitute for missing biological limbs (at para 331). The panel later noted (at para 349) as part of its detailed analysis that *"the significant risk of disabled athletes being unfairly prevented from competing, and the risk that disabled athletes who derive no competitive advantage from their prosthetic aids will be forced to incur irrecoverable expenses in proving* [that their mechanical aids do not confer any overall athletic advantage] *both weigh heavily in any assessment of the overall necessity, reasonableness and proportionality of the Rule"* .

158. The above observations, which were not the subject of adverse submission or comment before this Panel, are relevant to the questions of necessity, reasonableness and proportionality.

159. The panel in *Leeper I* concluded that it was not necessary, reasonable or proportionate to impose the burden of proof on the disabled athlete to establish the effect of a mechanical aid on their athletic performance and competitiveness. As noted, WA now accepts that, according to Rule 6.3.4 as it now stands, it bears the burden of proof of establishing that Mr Leeper derives an overall competitive advantage from the use of the particular prosthetic aid.

160. During closing submissions, the Panel raised the question of proportionality with the Parties, specifically the proportionality in its application to Mr Leeper in light of his evidence that he

could not adjust to new prostheses that conformed to his MASH height in time for selection for, or competing in, the Tokyo Olympic Games. The Panel asked whether there was any other way in which Mr Leeper could compete. The Panel requested the Parties to consider this question, adjourned the hearing and reconvened to hear further submissions.

161. The Parties' submissions are summarised as follows.

162. WA submitted that:

- The *Leeper I* panel found that the purpose of Rule 6.3.4 is to pursue a legitimate objective (at para 332). This Panel should proceed on the same basis. It is for Mr Leeper to show that there is a less-restrictive means of achieving that legitimate objective. He has not even attempted to identify a less-restrictive means, let alone substantiate it by competent evidence.

- Mr Leeper has never argued that Rule 6.3.4 operates disproportionately in this case. As a result, this was not a case that WA was ever required to meet. In any event, Rule 6.3.4 does not operate disproportionately in this case:

    - Mr Leeper argues that he has been running on MASH non-compliant blades for many years and cannot now reduce them to his MASH height. However, Mr Leeper's testimony at the hearing that he tried running on MASH-compliant blades for seven to ten days but that he *"threw [his] back out"* was never mentioned before. There is absolutely no competent medical evidence in the record to that effect. Mr Leeper has explained that it has taken him several months to acclimatise to blades 5 cm shorter than his previous blades (at issue in *Leeper I*). One now knows that he can run safely on those blades. Therefore, his attempt to run on MASH-compliant blades for only seven to ten days cannot demonstrate that he is not capable of familiarising himself with such blades if given sufficient time.

    - If it is found that WA has met its burden under Rule 6.3.4, the result would be that Mr Leeper is unable to compete in four events (the quadrennial Olympic Games and the biennial World Outdoor Championships, World Indoor Championships, and World Relay Championships). However, Mr Leeper may still compete in all other WA-sanctioned international-level events, including Diamond League events, Continental Tour events, and Indoor Tour events, with his results listed separately. Mr Leeper may still compete in national-level events, without restriction from WA, subject only to any eligibility conditions imposed by the national association. This limited impact confirms the proportionality of the rule, i.e. that it does no further than what is necessary to achieve the legitimate objective of Rule 6.3.4.

- Mr Leeper never had any legitimate expectation that he would be permitted to run in WA or USATF events on his non-MASH compliant blades. He knew that the MASH rule was implemented to prevent double amputees from gaining an advantage by *"running tall"*. He knew that his national federation, USATF, had adopted the new

MASH rule for its competitions. Mr Leeper was not allowed to run in the 2018 USATF National Championships at all, because he was not MASH-compliant, and he was allowed to run in the 2019 USATF National Championships only under protest. He also knew that WA had a rule that prohibited the use of blades that gave the user an overall competitive advantage.

- WA cannot conceive of any mechanism that would be appropriate to enable Mr Leeper to compete in the Olympic trials at MASH plus 10 cm. The entire point of Rule 6.3.4 is to ensure fairness by ensuring that everyone is running on a level playing field. Any individual exception would swallow the rule: there will not be a level playing field if Mr Leeper runs above his MASH height.

163. Mr Leeper submitted that:

- If the Panel concludes that WA has met its burden of proving that Mr Leeper's proposed RSPs provide him with an overall competitive advantage, then it should determine whether the sanction of prohibiting Mr Leeper from competing this year on his current RSPs would be an excessive and disproportionate sanction in this particular case. The burden of proof on proving proportionality rests on WA, which has not met it.

- Rule 6.3.4, as interpreted by WA to bar Mr Leeper from competition on his RSPs with able-bodied athletes, is grossly disproportionate to any legitimate objective. He is currently not able to compete at a lower height without risking injury.

- He relied for many years on the fact that, prior to 2018, the MASH rule permitted him to compete at a greater height. WA never adopted the MASH rule, and gave no warning to Mr Leeper or any amputee athletes that the MASH rule would even apply to WA's events until the *Leeper I* proceedings began in 2020. The only procedures that WA adopted regarding Mr Leeper's RSPs never mentioned the MASH rule. Mr Leeper's only fair inference from this obvious omission was that the MASH rule did not apply and that the question of *"overall advantage"* would be assessed in the round, based on scientific issues.

- WA also wrongly contends that the rule has only a *"limited impact"* because Mr Leeper is unable to compete in only four events. But denying Mr Leeper his greatest ambition to compete at the highest level on the world stage is the *"limited impact"*.

- The appropriate, proportional relief would be to permit him to compete on his current RSPs in all WA events, including the Olympics if he qualifies, with the option of a possible reconsideration of that determination in future years if WA takes appropriate steps to set proper, non-discriminatory limits on the length of RSPs with which Mr Leeper and other double-amputee athletes would have to comply. That proportionate relief would permit WA potentially to apply the MASH rule to Mr Leeper but only if it has meanwhile been validated for athletes of African heritage through a new population

study conducted by scientists having no connection with WA or any other interest that bring into question their neutrality.

164. The Panel notes as a preliminary matter that Mr Leeper did not explain to the Panel why, as he contended, Rule 6.3.4 was not a necessary, reasonable or proportionate way of achieving WA's legitimate objective of ensuring the fairness and integrity of competition. The Panel, given its findings in Sections X.B–C, is unable to accept Mr Leeper's contention.

165. The Panel's proportionality analysis, then, hinges on one important question: whether there exist any practical alternatives to disallowing Mr Leeper's current RSPs. Both Parties have (at the Panel's urging) considered alternatives to total disallowance. However, neither Party has identified a workable alternative. Mr Leeper submitted that he should be permitted to compete on his current RSPs, which decision could be reconsidered in the future. WA raised other possible alternatives, as did the Panel, including a time handicap, or starting further back at a distance calculated to equate to the advantage. For each suggestion, WA explained why it would be unworkable and unfair to the other athletes in a 400m race. Mr Leeper did not adopt any of WA's suggestions.

166. In the absence of workable alternatives, the Panel declines to adopt a novel alternative to the requirement that, in order to compete in WA-sanctioned events, Mr Leeper must run at his MASH height. Given this finding, the Panel need not assess the Parties' other arguments made in relation to proportionality.

167. The Panel adds that it has not received medical evidence that Mr Leeper risks injury by running on his MASH height. The Panel acknowledges that Mr Leeper will not have time to acclimatise himself to MASH-compliant RSPs for the US trials for the Tokyo Olympics; but he will have time to acclimatise himself for the 2022 Indoor and Outdoor World Championships.

ON THESE GROUNDS

The Court of Arbitration for Sport rules that:

1. The appeal filed by Mr Blake Leeper on 1 May 2021 against World Athletics' decision dated 26 April 2021 to deny his application dated 24 December 2020 is dismissed.

2. The decision rendered by World Athletics on 26 April 2021 is confirmed.

3. (…).

4. (…).

5. All other or contrary motions or prayers for relief are dismissed.