

**United States Court of Appeals  
for the Federal Circuit**

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**HOYT AUGUSTUS FLEMING,**  
*Appellant*

v.

**CIRRUS DESIGN CORPORATION,**  
*Appellee*

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2021-1561

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Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2019-01566.

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Decided: March 10, 2022

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MICHAEL S. DOWLER, Park, Vaughan, Fleming & Dowler LLP, Houston, TX, argued for appellant.

KEVIN P. WAGNER, Faegre Drinker Biddle & Reath LLP, Minneapolis, MN, argued for appellee. Also represented by VICTOR P. JONAS; JOEL SAYRES, JD SCHNEIDER, Denver, CO.

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Before LOURIE, HUGHES, and STOLL, *Circuit Judges*.  
STOLL, *Circuit Judge*.

Hoyt Augustus Fleming appeals the Patent Trial and Appeal Board's final written decision determining that the challenged claims of U.S. Patent No. RE47,474 are unpatentable as obvious. Mr. Fleming also appeals the Board's denial of his motion to amend certain claims. The Board determined the proposed amended claims lacked written description and were indefinite. We affirm the Board's obviousness determination and its denial of Mr. Fleming's motion to amend.

## BACKGROUND

### I

The '474 patent describes ballistic parachute systems on aircraft. '474 patent, Abstract; *id.* col. 1 ll. 1–30. The specification explains that ballistic parachutes use a rocket to quickly deploy a parachute, slowing the fall of a crashing aircraft. *See, e.g., id.* at col. 1 ll. 37–47. The chief benefit of a ballistic parachute is its speed in deploying a potential life-saving measure that slows the aircraft's descent. Not surprisingly, a ballistic parachute is most successful in slowing the descent of a failing aircraft when it can become fully inflated and functional. *See id.* at col. 1 ll. 46–47.

As the specification explains, it takes time for a ballistic parachute to fully inflate and begin stabilizing an aircraft. A higher aircraft altitude upon deployment of the parachute means there is more time for the parachute to deploy and slow the aircraft. *Id.* at col. 10 ll. 1–13. Even with a high deployment altitude, however, full stabilization can only be achieved if the parachute is deployed properly. *See id.* at col. 10 ll. 14–59. For example, if the parachute is deployed when the aircraft is upside down, the parachute is more likely to become tangled and nonfunctional. *Id.* at col. 10 ll. 44–52. And if the aircraft is moving too quickly, the parachute may simply rip away from the aircraft rather than inflating. *See, e.g., id.* at col. 10 ll. 14–30. The specification discloses that it is preferred to reach key operating parameters—like certain speed, altitude, and pitch—

before (or, if time requires, while) deploying a ballistic parachute. *See id.* at col. 9 l. 61–col. 10 l. 59.

The '474 patent is directed to a subset of these systems, termed “*intelligent* ballistic parachute systems.” *Id.* Title, Abstract (emphasis added). The specification explains that the disclosed intelligent ballistic parachute system is capable of performing pre-activation and post-activation actions, i.e., actions taking place before or after the ballistic parachute is activated. *Id.* at col. 9 l. 61–col. 13 l. 38. Such pre- and post-activation actions may include instructing the aircraft to: (1) turn or increase altitude, *id.* at col. 11 ll. 43–46; (2) fly at a level attitude, *id.* at col. 11 ll. 47–49; (3) reduce speed, *id.* at col. 11 ll. 20–33; or (4) enable or disable “reefing control,” which controls the inflation time of the parachute, *id.* at col. 8 l. 63–col. 9 l. 2. These actions are intended to help the aircraft reach desired operating parameters for deploying a ballistic parachute without the direct involvement of a pilot. *Id.* at col. 11 ll. 6–56.

Specifically, the '474 patent discloses that, upon receiving a parachute activation request from an “activation interface,” “one or more processors” determine whether a pre-activation action must be performed before deploying the parachute. *Id.* at col. 54 ll. 24, 29, 40–46; *see also id.* at col. 9 l. 61–col. 11 l. 56, Fig. 14. If so, the processors command performance of the pre-activation action. *Id.* at col. 11 ll. 50–56; *see also, e.g., id.* at col. 54 ll. 40–52. The processors may also command performance of a post-activation action. *Id.* at col. 11 ll. 57–59.

Although not claimed, the '474 patent written description also contemplates the optional inclusion of an “intelligence override interface.” *Id.* at col. 8 ll. 36–39, 50–62. This interface allows an aircraft occupant to manually bypass the processor-controlled operations to immediately deploy the parachute, for example by pulling a pull-handle or pressing a button. *Id.* at col. 8 ll. 50–62.

The original claims of the '474 patent at issue in this appeal are claims 137–139. Claim 137 is representative:

137. An aircraft, the aircraft including:

a fuselage;

a whole-aircraft ballistic parachute, which includes a rocket, that is coupled to the fuselage of the aircraft,

an activation interface,

a pitch sensor,

an autopilot,

one or more memories having machine-readable instructions stored thereon, and

one or more processors, each of the one or more processors configured to read and execute a portion of the machine-readable instructions;

wherein at least one of the one or more processors is coupled to the activation interface, at least one of the one or more processors is coupled to the pitch sensor, at least one of the one or more processors is coupled to the autopilot, at least one of the one or more processors is coupled to the rocket, at least one of the one or more processors is coupled to the one or more memories;

the aircraft configured to perform a method comprising:

receiving, by the activation interface, a whole-aircraft ballistic parachute deployment request from an occupant of the aircraft; then based upon the receipt of the whole-aircraft ballistic parachute deployment request by the activation interface, both performing an action and also deploying the whole-aircraft ballistic parachute;

wherein the machine readable-instructions include the action comprising:

based at least upon the receipt of the whole-aircraft ballistic parachute deployment request, command the autopilot to increase aircraft pitch.

*Id.* at col. 54 ll. 20–51. Claims 138 and 139 are identical except for the final phrase describing the action to be taken upon receipt of the parachute deployment request. In claim 138, the autopilot is commanded to “reduce aircraft roll,” and in claim 139 it is commanded to “change the attitude of the aircraft.” *Id.* at col. 54 l. 52–col. 55 l. 17, col. 55 l. 18–col. 56 l. 25.

## II

In its final written decision, the Board determined that claims 137–139 of the ’474 patent would have been obvious over a combination of Cirrus Design’s Pilot Operation Handbook for the SR22, Revision A7, (Oct. 10, 2003) (“POH”) and U.S. Patent No. 6,460,810 (“James”). *Cirrus Design Corp. v. Fleming*, No. IPR2019-01566, 2021 WL 54778, at \*8–13 (P.T.A.B. Jan. 6, 2021) (*Decision*). Because Mr. Fleming challenges the Board’s findings regarding POH and James, we discuss each reference below.

## A

POH is a pilot’s operating handbook that “familiarize[s] operators with the Cirrus Design SR22 airplane” and is intended to be always carried in the aircraft. J.A. 1658, 1664. Among other things, POH describes the operation of the Cirrus Airframe Parachute System (CAPS), a ballistic parachute system installed on the Cirrus SR22 airplane. The parachute system is activated by an aircraft occupant “[p]ulling the activation T-handle.” J.A. 1937.

POH explains that a pilot should take certain factors into consideration before activating the system and deploying the parachute. For example, POH suggests that the

parachute “should be activated from a wings-level, upright attitude if at all possible.” J.A. 2125. POH also teaches that “the chances of a successful deployment increase with altitude.” J.A. 2125. Phrased differently, POH also expresses that higher aircraft altitudes provide “enhanced safety margins for parachute recoveries.” J.A. 1729. Conversely, POH lists “adverse external factors” that can negatively impact activation and “may result in severe injury or death to the occupants,” including “high deployment speed, low altitude, rough terrain or high wind conditions.” J.A. 1730.

## B

James is titled “Semiautonomous Flight Director” and describes a “device for programming industry standard autopilots” to allow “for the safe operation of any aircraft by an unskilled pilot.” James, Abstract. The purpose of James’s system is to “significantly reduc[e] a skilled pilot’s work load and/or eliminat[e] or supplant[] the piloting skills normally required to fly” an aircraft. *Id.* at col. 6 ll. 23–28. James describes that its system can be used with “any manned or unmanned helicopter or aircraft equipped with an autopilot.” *Id.*

James’s device includes various switches, including a “sixth switch,” described as a “switch to provide an ‘emergency shutdown/deploy parachute/activate visual, audible and radio frequency beacons’ command function logic signal.” *Id.* at col. 10 ll. 14–19. James also explains that, upon “receiv[ing] a flight status back from the aircraft’s autopilot [indicating] that the aircraft has encountered a negative flight maneuver,” its “preprogrammed SFD [Semiautonomous Flight Director] action may automatically initiate an emergency shut down procedure.” *Id.* at col. 18 ll. 28–33. This procedure can include, for example, “shutting off all engines, terminating all flight functions, deploying an emergency recovery parachute and activating any locating beacons.” *Id.* at col. 18 ll. 33–41.

## III

Cirrus Design Corp. petitioned for inter partes review of claims 2, 3, 8, 10, 15, 132, and 135–139 of the '474 patent. *Decision*, 2021 WL 54778, at \*1. During the proceeding, Mr. Fleming filed a motion to amend (and then a revised motion), seeking to replace claims 2, 3, 8, 10, 15, and 132 with proposed substitute claims 140–145, and separately to replace claims 137–139 with proposed substitute claims 146–148 contingent on a finding that claims 137–139 are invalid. *Id.* Because the motion to amend was not contingent on a determination of unpatentability for the replacement of claims 2, 3, 8, 10, 15, and 132, those original claims were effectively cancelled and the Board determined that they were “no longer part of” the proceeding. *Id.* at \*1 n.6.

## A

The Board first addressed Cirrus’s proposed obviousness ground—the combination of POH and James.

Mr. Fleming did not dispute that it was well known in the art that aircraft autopilots are programmable and can perform flight maneuvers and deploy a parachute. *Id.* at \*8–9. Mr. Fleming argued, however, that neither POH nor James disclosed an autopilot performing flight maneuvers and deploying a parachute upon the aircraft’s receipt of a parachute deployment request.

The Board disagreed, determining that claims 137–139 were unpatentable as obvious over the combination of POH and James. *Id.* at \*8–13. The Board explained that James discloses (1) that its Semiautonomous Flight Director can “automatically initiate an emergency shut down procedure” upon receiving a negative flight status, *id.* at \*8 (citing James col. 18 ll. 28–41), and (2) that its “sixth switch” “provide[s] an ‘emergency shutdown/deploy parachute/activate visual, audible and radio frequency beacons’ command function logic signal.” *Id.* (citing James col. 10 ll. 14–19).

Put another way, the Board explained, James discloses that in response to a request to deploy a parachute, an aircraft may automatically initiate shut down procedures, including deploying a parachute. *Id.* at \*8. Specifically, the Board found that James discloses the use of an autopilot to take certain actions in an emergency situation, including for example “shutting off all engines, terminating all flight functions, [and] deploying an emergency recovery parachute.” *Id.* (citing James col. 18 ll. 28–41). The Board found that James describes that these actions may also include, for example, “slow[ing] the aircraft to landing speed and maintain[ing] a slow steady landing descent.” *Id.* (citing James col. 17 ll. 24–25).

The Board found that the ordinarily skilled artisan, seeking to implement James’s semiautonomous flight director on the Cirrus SR22, would have looked to POH for instructions regarding “actions to be taken based on a decision to deploy a whole-aircraft ballistic parachute.” *Id.* at \*10. Because POH describes that a ballistic parachute system performs best at certain flight parameters, e.g., increased altitude and level attitude, the Board, relying on expert testimony, found that the skilled artisan would have recognized it is desirable to tailor James’s system in view of those parameters. *Id.* at \*10–11. The resulting aircraft would, upon the receipt of a parachute deployment request, perform certain flight maneuvers to maximize the chances of a successful parachute deployment, for example adjusting altitude, attitude, and pitch. *Id.* Accordingly, the Board determined that claim 137, which requires that an autopilot “facilitate[s] or engage[s] the actions of flight maneuvering and parachute deployment ‘based at least upon the receipt of the whole-aircraft ballistic parachute deployment request,’” would have been obvious over the combination of POH and James. *Id.* at \*8–11. Because it found the prior art also discloses an autopilot reducing aircraft roll and changing aircraft attitude, the Board determined that



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claims 138 and 139 would have similarly been obvious. *Id.* at \*13.

Mr. Fleming argued that objective indicia of non-obviousness, namely copying, compelled a determination that the challenged claims would not have been obvious. Both Mr. Fleming and Cirrus submitted evidence on this point. The Board, considering the record as a whole, found that Mr. Fleming had not adequately shown evidence of copying.

## B

The Board further found that Mr. Fleming's proposed amended claims did not meet the statutory and regulatory requirements for patentability because they lacked written description support and thus constituted new matter.

Each of the proposed amended claims includes, or depends from a claim that includes, the following clause<sup>1</sup>:

wherein the aircraft is configured to select, using at least a portion of the distributed process system, a procedure from two procedures, comprising:

- (i) a first procedure that uses the autopilot to increase aircraft altitude if aircraft airspeed is greater than a reference airspeed, and
- (ii) a second procedure that does not use the autopilot to increase aircraft altitude if

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<sup>1</sup> Proposed substitute claims 140 and 142–145 use the phrase “configured to select.” Proposed substitute claims 141 and 147 use the phrase “capable of selecting.” Proposed substitute claim 146 uses the phrase “configured to selectively activate.” Proposed substitute claim 148 uses the phrase “capable of selectively activating.”

aircraft airspeed is greater than the reference airspeed;

wherein the aircraft is configured to activate, using the at least a portion of the distributed processing system and based upon a pull of the pull handle, the selected procedure but not the unselected procedure.

J.A. 7743. The Board and the parties referred to these clauses as the “Procedural Selection Limitations.” Mr. Fleming argued that the original patent application leading to the ’474 patent (U.S. Patent Application No. 12/368,911), as well as the originally granted patent before reissue (U.S. Patent No. 8,100,365), provided written description support for the Procedural Selection Limitations.

In its decision, the Board considered and discussed each of Mr. Fleming’s citations to the written description. In each case, the Board found that the cited portions did not disclose the limitations of the proposed amended claims. Accordingly, the Board found that the proposed amended claims lacked written description support and were thus unpatentable. The Board also held the proposed amended claims unpatentable as indefinite.

Mr. Fleming appeals. We have jurisdiction under 35 U.S.C. § 1295(a)(4)(A).

#### DISCUSSION

On appeal, Mr. Fleming argues that the Board erred in determining that the challenged claims are unpatentable and in denying his motion to amend. We address his arguments in turn.

#### I

We begin with obviousness. We review the Board’s legal conclusions de novo and its factual findings for substantial evidence. *Univ. of Strathclyde v. Clear-Vu Lighting*

*LLC*, 17 F.4th 155, 160 (Fed. Cir. 2021). “The substantial evidence standard asks ‘whether a reasonable fact finder could have arrived at the agency’s decision,’ and ‘involves examination of the record as a whole, taking into account evidence that both justifies and detracts from the agency’s decision.’” *OSI Pharms., LLC v. Apotex, Inc.*, 939 F.3d 1375, 1381–82 (Fed. Cir. 2019) (quoting *In re Gartside*, 203 F.3d 1305, 1312 (Fed. Cir. 2000)).

Obviousness is a legal question based on underlying findings of fact. *Strathclyde*, 17 F.4th at 160. A claim is unpatentable as obvious “if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” 35 U.S.C. § 103. The inquiries of whether the prior art discloses a claim limitation, whether a skilled artisan would have been motivated to modify or combine teachings in the prior art, and whether she would have had a reasonable expectation of success in doing so are questions of fact, reviewed for substantial evidence. *Strathclyde*, 17 F.4th at 160. The existence and weight assigned to any objective indicia of nonobviousness are factual considerations that we review for substantial evidence. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1372–73 (Fed. Cir. 2019).

On appeal, Mr. Fleming challenges the Board’s obviousness determination, arguing that none of the prior art discloses commanding an aircraft’s autopilot to increase pitch, reduce roll, or change attitude based on the aircraft’s receipt of a parachute deployment request, as required by claims 137–139. He also argues that the prior art teaches away from the claimed invention in the ’474 patent and that the combination of POH and James would be unsafe. We address each argument in turn.

## A

We begin with Mr. Fleming’s argument that the proposed combination does not teach the claimed autopilot operations. We disagree. The Board, in reaching its obviousness determination, acknowledged that neither POH nor James specifically taught commanding an autopilot to perform the claimed flight maneuvers of increasing pitch, reducing roll, or changing attitude upon receipt of a parachute deployment request. The Board nevertheless found that one of ordinary skill in the art would have been motivated to program James’s autopilot system to perform these flight maneuvers upon receipt of a parachute deployment request because they are suggested by POH in order to achieve safe and beneficial deployment of a ballistic parachute.

The Board’s finding is supported by substantial evidence. First, the parties do not dispute that it was well known that aircraft autopilots are programmable to perform certain actions, for example increasing aircraft pitch and deploying a parachute. Further, as the Board correctly explained, James discloses that upon receiving a signal, “an aircraft may automatically initiate shut down procedures, including deploying an emergency parachute.” *Decision*, 2021 WL 54778, at \*8. And James also discloses, as found by the Board, that an autopilot is capable of performing certain flight maneuvers on an aircraft, such as “slow[ing] the aircraft to landing speed and maintain[ing] a slow steady landing descent.” *Id.* (citing James col. 17 ll. 24–25). Further, POH emphasizes that these standard autopilot maneuvers—slowing aircraft speed, maintaining a steady attitude, and changing aircraft pitch—should preferably be completed before deploying an emergency parachute. J.A. 1729–32, 2123–28. This evidence amply supports the Board’s finding that a person of ordinary skill would have been motivated to program James’ autopilot in view of POH so that, upon the receipt of a parachute deployment request, James’ autopilot would seek to ensure

safety by following POH's guidance for safe parachute deployment, including changing the aircraft's pitch, reducing aircraft roll, and/or achieving a level attitude as needed.

That the proposed *combination* of James and POH—rather than one of the individual references—discloses the disputed claim limitations does not defeat the Board's conclusion of obviousness. In this case, it is sufficient that a person of ordinary skill in the art would have been motivated to combine the prior art in a way such that the combination discloses the claim limitations. *See Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (citing *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 415–22 (2007)).

Mr. Fleming argues that our decision in *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355 (Fed. Cir. 2016)—where we criticized the Board for relying on common sense to supply a missing claim limitation—compels a conclusion of nonobviousness. Appellant's Br. 44–60. We are unpersuaded. When considering obviousness of a claimed invention, the Supreme Court has emphasized that the “person of ordinary skill is also a person of ordinary creativity, not an automaton.” *KSR*, 550 U.S. at 421. Since *KSR*, we have explained that it is appropriate to consider the knowledge, creativity, and common sense of a skilled artisan in an obviousness determination. *Randall Mfg.*, 733 F.3d at 1362. While we have cautioned against the misuse of these considerations—for example, we have held that they cannot be used “as a wholesale substitute for reasoned analysis and evidentiary support,” *Arendi*, 832 F.3d at 1362—we have continued to approach the obviousness inquiry with the flexibility required by *KSR*. *See id.* at 1361 (“[W]e do consider common sense, common wisdom, and common knowledge in analyzing obviousness.”).

The Board's conclusion, that the ordinarily skilled artisan would program James's autonomous system to perform the claimed flight maneuvers as suggested by POH, is thus the result of a faithful application of our law on

obviousness, including *KSR*'s directive to consider the creativity of the ordinarily skilled artisan. We see no error in the Board's conclusion on this point.

## B

We now consider Mr. Fleming's argument that the prior art teaches away from the claimed invention. Specifically, Mr. Fleming argues that the prior art cautioned that autopilots should not be used in certain emergency situations where a ballistic parachute may be needed. The Board considered this argument and found that the prior art did not teach away. As we explain below, the Board's fact finding is supported by substantial evidence.

Mr. Fleming cites various passages from the asserted prior art indicating that the use of an autopilot is not advised in certain flight situations—for example upon takeoff and landing or when the aircraft is below a certain altitude—that encompass the circumstances in which a whole aircraft parachute is likely to be needed. Appellant's Br. 53 (citing J.A. 2022–23). According to Mr. Fleming, the prior art thus teaches away from using an autopilot upon receipt of a parachute deployment request. But a reasonable factfinder could nonetheless conclude that the prior art does not suggest to the skilled artisan that an autopilot should never be used in any emergency situation for any aircraft, as Mr. Fleming contended. For example, James discloses that the continuous use of an autopilot is of particular benefit for unmanned aerial vehicles. James col. 1 l. 65–col. 2 l. 13. POH discloses that the use of the ballistic parachute system “would be appropriate” in the event of pilot incapacitation, suggesting use of an autopilot to deploy the ballistic parachute system. J.A. 1730. And, as the Board noted, the challenged claims do not require any safety features. *Decision*, 2021 WL 54778, at \*10. Substantial evidence thus supports the Board's finding that the prior art does not teach away from the claimed invention.

Mr. Fleming also contends that the Board ignored his argument that a skilled artisan would have been dissuaded from making the proposed combination because using James’s autopilot would be unsafe in many emergency situations. Appellant’s Br. 56–60. To be clear, the Board did not ignore this argument. *See Decision*, 2021 WL 54778 at \*10 (addressing Mr. Fleming’s argument “that the combination is unsafe”). In addressing this exact argument, the Board correctly explained that the obviousness inquiry does not require that the prior art combination is the “preferred, or the most desirable” configuration. *Id.* (quoting *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004)); *see also Bayer Healthcare Pharms., Inc. v. Watson Pharms., Inc.*, 713 F.3d 1369, 1376 (Fed. Cir. 2013). That the prior art cautioned pilots not to use an autopilot in some emergency situations on some aircraft does not mean that the skilled artisan would have been dissuaded from doing so in all emergency situations on all aircraft. The Board’s finding that Mr. Fleming’s “unsafe” argument fails is thus supported by substantial evidence.

### C

Finally, we consider Mr. Fleming’s argument that the Board did not appropriately consider objective indicia of non-obviousness, namely copying. We disagree. Although evidence of copying must, if presented, be considered in the obviousness analysis, “[n]ot every . . . product that arguably falls within the scope of a patent is evidence of copying. Otherwise[,] every infringement suit would automatically confirm the nonobviousness of [a] patent.” *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004). The Board properly considered the evidence for and against copying and found that Mr. Fleming had not sufficiently shown that Cirrus copied his alleged invention. *Decision*, 2021 WL 54778, at \*11–12. This finding is supported by substantial evidence.

Mr. Fleming introduced his own declaration to the Board as evidence of copying. In his declaration, Mr. Fleming alleged that he repeatedly provided to Cirrus copies of the patent application that would eventually become the '474 patent and that Cirrus incorporated disclosed material into its Vision Jet and its own patent application. Attached to the declaration were copies of the letters Mr. Fleming sent to Cirrus. Although Mr. Fleming's declaration indicates that he subjectively believes that claims of Cirrus's patent application mirror those of the '474 patent, his evidence does not provide "any meaningful infringement analysis in connection with a product of" Cirrus, as the Board correctly noted. *Decision*, 2021 WL 54778, at \*12.

For its part, Cirrus presented evidence more directly tied to the Cirrus product identified by Mr. Fleming, including a declaration from its Chief Engineer testifying that Cirrus's parachute system was independently developed. Cirrus also identified limitations of the '474 patent claims that were not found in its parachute system. Finally, Cirrus noted that its own patent application included limitations different from those in the '474 patent claims.

After considering all the evidence on the question of copying, the Board was entitled to find that Mr. Fleming's evidence did not establish that Cirrus copied his alleged invention, particularly in light of the contrary evidence introduced by Cirrus.

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We thus affirm the Board's determination that claims 137–139 of the '474 patent are unpatentable because they would have been obvious over the combination of POH and James.

## II

We move now to Mr. Fleming's proposed amended claims. The Board denied Mr. Fleming's motion to amend



after concluding that the claims lacked sufficient written description and were indefinite. Mr. Fleming challenges the Board's denial of his motion to amend. For the reasons below, we conclude that substantial evidence supports the Board's finding that the proposed amended claims are unsupported by the written description. We therefore need not address Mr. Fleming's arguments regarding indefiniteness.

We review the Board's decision to deny a motion to amend under the Administrative Procedure Act, and we may set aside the Board's action if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); *Bosch Auto. Serv. Sols., LLC v. Matal*, 878 F.3d 1027, 1039 (Fed. Cir. 2017). The Board abuses its discretion if, among other things, its conclusion rests on a clearly erroneous finding of fact. *Intelligent Bio-Sys. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016).

Whether a claim satisfies the written description requirement is a question of fact. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). A claim has met the written description requirement of 35 U.S.C. § 112 if it "clearly allow[s] persons of ordinary skill in the art to recognize that the inventor invented what is claimed." *Id.* at 1351 (quoting *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991)). Said otherwise, the application's disclosure must "reasonably convey[] to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Id.*

As discussed above, the proposed amended claims all include, or depend on claims which include, the Procedural Selection Limitations. On appeal, Mr. Fleming challenges the Board's construction of certain portions of these

limitations.<sup>2</sup> We need not consider Mr. Fleming’s proposed construction, however, because substantial evidence supports the Board’s finding of lack of written description under either Mr. Fleming’s or the Board’s construction.

The proposed amended claims require that “the aircraft is configured to select, using at least a portion of the distributed processing system, a procedure from two procedures . . . wherein the aircraft is configured to activate, using the at least a portion of the distributed processing system and based upon a pull of the pull handle, the selected procedure but not the unselected procedure.” J.A. 7743. Thus, the claims require that the *aircraft* use at least a portion of the distributed processing system to select one of two procedures. The claims further require that the *aircraft* may activate—again using at least a portion of the distributed processing system and based on an occupant pulling the pull handle—the selected procedure. In other words, the proposed amended claims require that the aircraft itself be capable of automatically performing certain functions. The parties do not specifically dispute this construction of this portion of the Procedural Selection Limitations.

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<sup>2</sup> Specifically, Mr. Fleming’s claim construction arguments focus on the portion of the Procedural Selection Limitations listing the available procedures: “(i) a first procedure that uses the autopilot to increase aircraft altitude if aircraft airspeed is greater than a reference airspeed, and (ii) a second procedure that does not use the autopilot to increase aircraft altitude if air-craft airspeed is greater than the reference airspeed.” J.A. 7743. Mr. Fleming contends that “(1) the aircraft’s configuration for a processor-based selection between two procedures is *not* dependent on the aircraft’s airspeed, and (2) the second procedure does *not* require increasing altitude.” Appellant’s Br. 20.

The Board found that the portions of the specification cited by Mr. Fleming do not provide support for this claim requirement. For example, Mr. Fleming relied on a passage from the '911 application disclosing an “intelligence override interface,” which can be used to immediately deploy a parachute. *Decision*, 2021 WL 54778, at \*16 (citing '911 application p. 12 l. 15–p. 13 l. 2). But this passage discloses only that the “intelligence override” can be manually triggered by an aircraft occupant, for example by pulling a pull-handle or pressing a button. '911 application p. 12 ll. 19–21 (describing a “conventional pull-handle that activates the deployment of the ballistic parachute”). Indeed, Mr. Fleming appears to agree that the “intelligence override” feature requires manual selection. *See* Appellant’s Br. 13 (“It allows the aircraft occupant to dismiss (or override) . . .”); *id.* at 14 (“[T]o give the aircraft occupant the option . . .”). The Board reasonably found that this disclosure of manual selection by an aircraft occupant does not adequately support the processor-based selection required by the proposed amended claims.

Further, this passage describes that the “intelligence override interface” “immediately activates the deployment of the ballistic parachute [] regardless of whether the processor [] determines that one or more actions need to be performed before” activation. '911 application p. 12 ll. 25–28. In other words, the disclosed interface immediately deploys the parachute upon manual activation of the intelligence override—disregarding the processor. The Board thus reasonably found that this passage does not disclose an aircraft that is configured to activate a selected procedure using a processor, as required by the proposed amended claims.

Mr. Fleming cited additional portions of the '911 application’s disclosure to the Board as allegedly supporting the proposed amended claims. *See Decision*, 2021 WL 54778, at \*16–18. The Board, upon considering each of these excerpts, found that they similarly did not support the

processor-based selection of one of two procedures as required by the proposed amended claims.

On appeal, Mr. Fleming does not specifically challenge any of the Board's findings regarding these passages in the '911 application. Rather, he contends that "the '474 patent specification clearly describes" the aircraft contemplated by the proposed amended claims, and thus that "every identified basis for the Board's findings regarding . . . written description falls away." Appellant's Br. 31. We disagree. Because Mr. Fleming pointed to no passage in the specification that supports the aircraft activation requirements of the proposed amended claims, we conclude that substantial evidence supports the Board's finding of lack of written description and therefore that the Board did not abuse its discretion in denying Mr. Fleming's motion to amend.

Because we affirm the Board's finding that the proposed amended claims were not supported by written description, we do not address whether the Board erred in determining that the claims are indefinite.

#### CONCLUSION

We have considered Mr. Fleming's remaining arguments but do not find them persuasive. For the foregoing reasons, we affirm the Board's final written decision.

**AFFIRMED**