

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
FORT WORTH DIVISION**

**THE LITEBOOK COMPANY
LTD.,**

Plaintiff,

v.

**BOMBARDIER AEROSPACE
CORPORATION and NETJETS
AVIATION, INC.**

Defendants.

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CASE NO. 4:22-cv-615

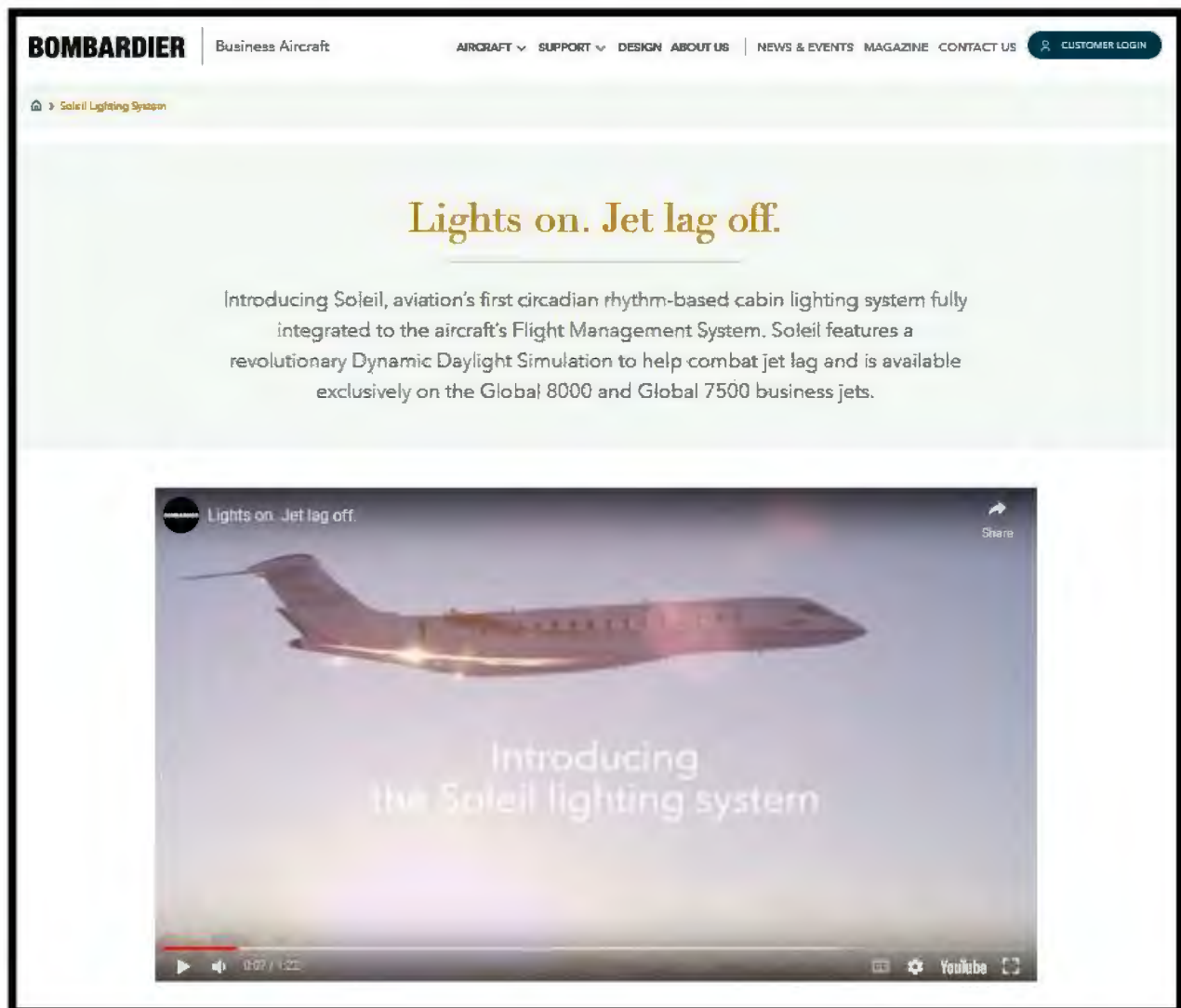
JURY TRIAL REQUESTED

PLAINTIFF’S ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

For over twenty years, Litebook has brought effective light therapy technologies to consumers, funded research to explore the benefits of light therapy, and raised awareness by sharing its extensive knowledge about light therapy. Renowned experts in the field and longtime Litebook collaborators Professors Gena Glickman, PhD, and George “Bud” Brainard, PhD, pioneered the application of light for regulation of melatonin in mammals, which is now recognized as effective for regulating circadian systems. In recognition of certain aspects of their work and inventions in the field, in 2010 Professors Glickman and Brainard were awarded U.S. Patent No. 7,678,140, titled “Photoreceptor System for Melatonin Regulation and Phototherapy.”

Defendants Bombardier and NetJets also recognized the value of the subject matter claimed in the ’140 Patent and incorporated it into their Global 7500 and Global 8000 aircraft, thus practicing and infringing Litebook’s patent.

Bombardier boasts “aviation’s first circadian rhythm-based cabin lighting system,” called Soleil:



Bombardier’s Soleil Dynamic Daylight Simulation feature is based upon and practices Dr. Glickman’s and Dr. Brainard’s inventions.

The first ever Dynamic Daylight Simulation in aviation

The Soleil's Dynamic Daylight Simulation is a first in aviation. Fully-integrated with the aircraft's Flight Management System, Soleil automatically adjusts the cabin lighting to aid in stimulating or suppressing the production of melatonin which can help synchronize a traveler's circadian rhythm to the time at their destination.

NetJets touts the Bombardier Global 7500 as the flagship of its fleet:



Of all its features, including range, capacity, and speed, NetJets emphasizes the Global 7500's "innovative circadian lighting" system to help combat jet lag and improve passenger comfort.

BOMBARDIER
GLOBAL 7500

14 Passengers⁴ up to 16 Hours⁵ 195 ft³ Baggage

OUR FASTEST, LONGEST-RANGE PRIVATE JET AND FLAGSHIP OF THE NETJETS FLEET The new Bombardier Global 7500 elevates the private jet experience to an unprecedented level. The aircraft features four distinct cabin zones and both innovative circadian lighting and air-purification systems that help combat jet lag and leave passengers feeling refreshed.

Neither Bombardier nor NetJets have sought or obtained a license from Litebook to utilize its patented lighting system, and neither is authorized to do so. Thus, Litebook brings this suit for patent infringement, requesting compensation for Defendants' infringement and injunctive relief to stop their unauthorized use of Litebook's patented inventions.

PARTIES

1. Plaintiff The Litebook Company Ltd. is formed under the laws of Canada, with its principal place of business in Medicine Hat, Alberta, Canada.

2. Defendant Bombardier Aerospace Corporation is a foreign for-profit corporation organized under the laws of Delaware, with a principal place of business at 3400 Waterview Parkway, Suite 400, Richardson, TX 75080. Bombardier Aerospace Corporation may be served with process through its registered agent, CT Corporation System, at 1999 Bryan Street, Ste. 900, Dallas, TX 75201-3136.

3. Bombardier Aerospace Corporation demonstrates, manufactures, advertises, operates, and sells the Global 7500 and Global 8000 jets in this district and throughout the United States from its business locations in the district and via the Bombardier website (<https://bombardier.com/en>).

4. Defendant NetJets Aviation, Inc. is a foreign for-profit corporation organized under the laws of Delaware, with its headquarters at 4111 Bridgeway Ave, Columbus, Ohio 43219. NetJets Aviation, Inc. may be served with process through its registered agent, Corporation Service Company, at 211 E. 7th Street, Suite 620, Austin, Texas 78701-3218.

5. NetJets Aviation, Inc. advertises and operates the Global 7500 jet in this district through its locations in the district and via the NetJets website (<https://www.netjets.com/en-us/>).

JURISDICTION AND VENUE

6. This is an action for patent infringement arising under the Patent Act, 35 U.S.C. § 1 *et seq.*

7. This Court has subject-matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338 (a).

8. This Court has personal jurisdiction over Defendants under the laws of the State of Texas, due at least to their substantial business in Texas and in this judicial district, including: (a) at least part of their infringing activities alleged herein; and (b) regularly doing or soliciting business, engaging in other persistent conduct, and/or deriving substantial revenue from goods sold and services provided to Texas residents.

9. Venue is proper in this judicial district under 28 U.S.C. § 1400(b).

10. Bombardier maintains an established place of business in this district at 3400 Waterview Parkway, Suite 400, Richardson, TX 75080.

11. Bombardier advertises its use and operation of the Global 7500 and 8000 jets to customers in this district.

12. NetJets Aviation, Inc. maintains established places of business in this district at 7275 Lemmon Ave, Dallas, Texas 75209 and 8001 Lemmon Ave Terminal 1, Dallas, Texas 75209.

13. NetJets advertises its use of the Global 7500 to customers in this district.

14. Plaintiff Litebook has suffered damages in this district due to the Defendants' infringing conduct.

THE '140 PATENT

15. The Litebook Company Ltd. has all rights and interest in and to the '140 Patent necessary to bring this suit, including the right to enforce, assert, and sue for infringement, to collect royalties for past infringement, and to grant sublicenses.

16. U.S. Patent No. 7,678,140 is titled "Photoreceptor system for Melatonin Regulation and Phototherapy" and is valid, enforceable, and was duly issued by the United States Patent Office upon finding that it fully complied with Title 35 of the United States Code.

17. Claim 1 of the '140 Patent recites:

1. A method of at least treating or preventing at least one light responsive disorder in at least one mammal, said method comprising the steps of: utilizing at least one light source, said at least one light source emitting optical radiation; causing said optical radiation to be commonly therapeutically effective in humans by employing a pre-established spectral composition that has been pre-identified as a maximally potent spectral composition in the regulation of at least one of the human circadian, photoneural, or neuroendocrine systems; said pre-established spectral composition comprising at least one enhanced spectral region comprising at least one peak of emitted light within the range of 435-488 nm;
exposing at least a portion of the retina of at least one eye of at least one mammal to said pre-established spectral composition of optical radiation such that said light source is not mounted on the body of said at least one mammal;
stimulating the photoreceptor system for at least one of the circadian, photoneural or neuroendocrine systems of said at least one mammal;
and, enabling at least the treatment or the prevention of at least one light responsive disorder in said at least one mammal.

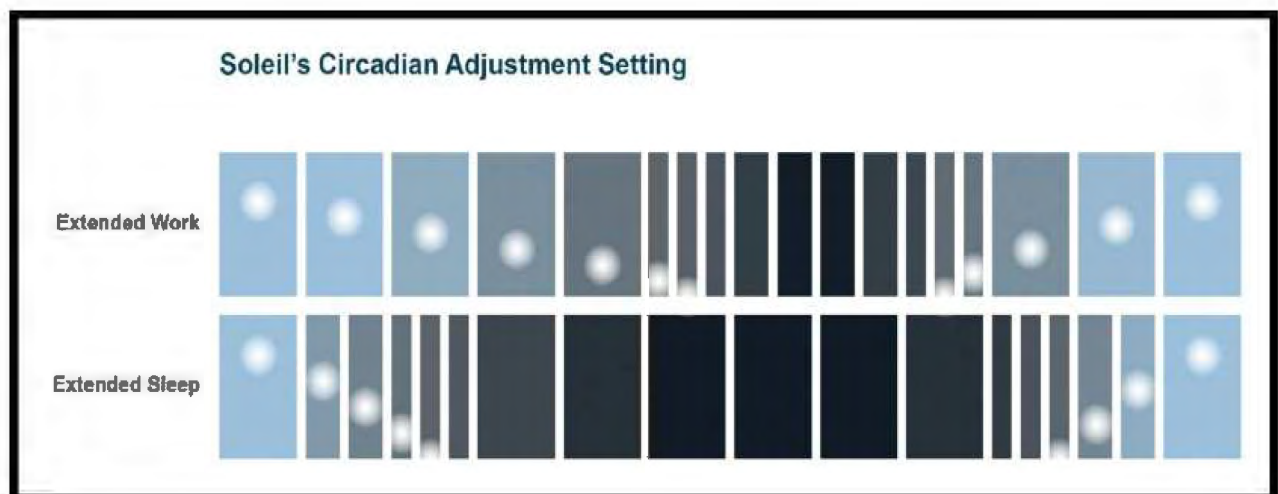
DEFENDANTS' GLOBAL 7500 AND 8000 BUSINESS JETS

18. Defendants demonstrate, operate, test, advertise, and use the Soleil Lighting System in their Global 7500 and Global 8000 aircraft, and older model aircraft retrofitted with updated Cabin Management Systems featuring Soleil, to practice the '140 Patent.

19. In normal operation, aircraft featuring Soleil practice each and every limitation of the asserted claims of the '140 Patent.

20. For example, the Soleil Lighting System uses a method of treating and preventing circadian rhythm disorders, such as the common disorientation caused by changing time zones known as "Jet Lag."

will match Los Angeles' outdoor lighting at that time of the year. As the flight progresses, the lighting in the cabin will gradually shift to more of the red light wavelength to help stimulate melatonin production to help you sleep. As the aircraft approaches London, the Soleil lighting system will gradually introduce blue light wavelengths that will slowly increase in intensity to help wake you up. By the time the aircraft lands in London, the cabin lighting will match the morning light at the destination, having effectively compressed the evening, night and morning light cycles.



While there are several factors that come into play when trying to manage jet lag, popular research has shown that lighting can have the greatest effect. The Soleil's Dynamic Daylight Simulation leverages specific combinations of red and blue light wavelengths to aid in stimulating or suppressing the production of melatonin—the body's sleep hormone—to help synchronize a traveler's circadian rhythm to the time at their destination. Using the departure and arrival time and locations entered into the FMS, Soleil's Dynamic Daylight Simulation automatically adjusts the lighting during the flight to replicate the variations in light intensity, color and hue to simulate natural daylight. By subtly manipulating these external cues, Bombardier's Soleil lighting system can help align the body's internal clock with the time at the destination and thereby help alleviate the jet lag that typically occurs on long distance flights.

<https://businessaircraft.bombardier.com/en/experience/featuredaircraft/overcoming-jet-lag-soleil-lighting-system-board-global-7500-aircraft>

21. The Soleil Lighting System uses LED lights installed in the aircraft cabin to emit optical radiation at least in the visible spectrum, including blue-light wavelengths.



<https://businessaircraft.bombardier.com/en/experience/featuredaircraft/overcoming-jet-lag-soleil-lighting-system-board-global-7500-aircraft>

22. The Soleil Lighting System uses pre-established blue light wavelengths to therapeutically adjust a passenger's circadian rhythm.

While there are several factors that come into play when trying to manage jet lag, popular research has shown that lighting can have the greatest effect. The Soleil's Dynamic Daylight Simulation leverages specific combinations of red and blue light wavelengths to aid in stimulating or suppressing the production of melatonin—the body's sleep hormone—to help synchronize a traveler's circadian rhythm to the time at their destination. Using the departure and arrival time and locations entered into the FMS, Soleil's Dynamic Daylight Simulation automatically adjusts the lighting during the flight to replicate the variations in light intensity, color and hue to simulate natural daylight. By subtly manipulating these external cues, Bombardier's Soleil lighting system can help align the body's internal clock with the time at the destination and thereby help alleviate the jet lag that typically occurs on long distance flights.

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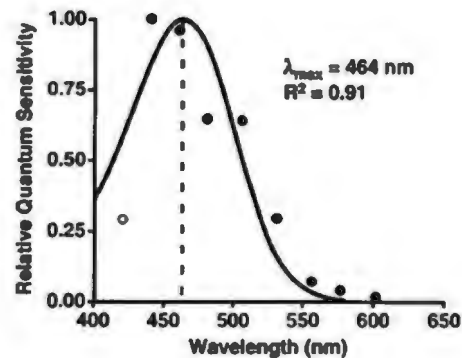


Figure 5. This graph demonstrates the action spectrum for percent control-adjusted melatonin suppression ... Brainard et al.

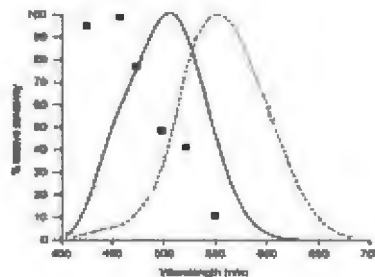
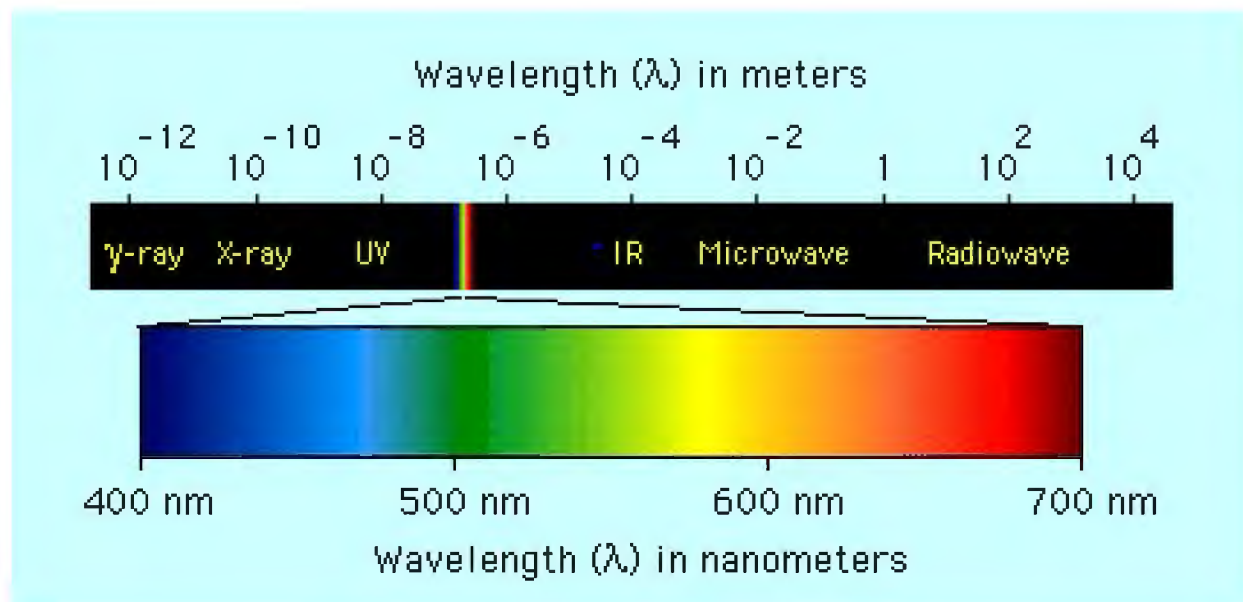


Figure 3. Action spectrum for melatonin suppression physiologically derived (*) compared to scotopic (gmax 505 nm, continuous line) and photopic (gmax 555 nm, dashed line) vision curves Thapan et al.

23. The Soleil Lighting System uses its Dynamic Daylight Simulation to leverage specific combinations of blue light wavelengths.

While there are several factors that come into play when trying to manage jet lag, popular research has shown that lighting can have the greatest effect. The Soleil's Dynamic Daylight Simulation leverages specific combinations of red and blue light wavelengths to aid in stimulating or suppressing the production of melatonin—the body's sleep hormone—to help synchronize a traveler's circadian rhythm to the time at their destination. Using the departure and arrival time and locations entered into the FMS, Soleil's Dynamic Daylight Simulation automatically adjusts the lighting during the flight to replicate the variations in light intensity, color and hue to simulate natural daylight. By subtly manipulating these external cues, Bombardier's Soleil lighting system can help align the body's internal clock with the time at the destination and thereby help alleviate the jet lag that typically occurs on long distance flights.

<https://businessaircraft.bombardier.com/en/experience/featuredaircraft/overcoming-jet-lag-soleil-lighting-system-board-global-7500-aircraft>



https://web.mst.edu/~gbert/Color_Lg/spec/Aspec.html

24. Defendants' Soleil Lighting System uses its Dynamic Daylight Simulation to adjust cabin light source intensity.

25. The Soleil Lighting System exposes the eyes of its airplane passengers to the pre-established spectral composition of optical radiation, using overhead lights to

illuminate an airplane cabin for human use.

To help tailor the lighting system to the desire of passengers, Malek and his team led the development of a circadian adjustment setting that customizes the lighting sequence to a traveler's preference for either extended work or rest. "The Extended Work setting lengthens the applicable blue light wavelength sequence to aid in prolonging wakefulness to get in more work, while the Extended Sleep setting lengthens the red light sequence that is most conducive to sleep."



<https://businessaircraft.bombardier.com/en/experience/featuredaircraft/overcoming-jet-lag-soleil-lighting-system-board-global-7500-aircraft>

26. The Soleil Lighting System's Dynamic Daylight Simulation leverages specific combinations of blue light wavelengths to stimulate the photoreceptor systems of aircraft passengers to adjust the output melatonin, a key chemical for stimulating the circadian system.

27. The Soleil Lighting System aligns the body's internal clock with the time at the destination to alleviate jet lag.

28. In normal operation, the Soleil lighting System automatically adjusts the amount of blue light during flight to enable the treatment, prevention, correction, or minimalization of circadian rhythm disorders to improve passenger comfort.

29. Bombardier and NetJets directly and indirectly infringe Litebook's '140 Patent.

COUNT 1
DIRECT INFRINGEMENT OF U.S. PATENT NO. 7,678,140

30. Plaintiff incorporates the preceding paragraphs herein by reference.

31. Neither Bombardier nor NetJets has Litebook's consent or authorization to practice the '140 Patent.

32. Bombardier and NetJets directly infringe one or more claims of the '140 Patent, including at least claim 1 under 35 U.S.C. § 271(a), by practicing one or more of the methods claimed.

33. At least as of the service of this complaint, Defendants are on notice and are aware of Litebook's '140 Patent and how they practice the subject matter claimed therein.

34. Litebook has been damaged and continues to be damaged by Defendants' infringing conduct.

35. Defendants are liable to Plaintiff in an amount that adequately compensates Litebook for Defendants' infringement, which compensation by law cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C.

§ 284.

COUNT 2
INDIRECT INFRINGEMENT OF U.S. PATENT NO. 7,678,140

36. Plaintiff incorporates the preceding paragraphs herein by reference.

37. Defendants have been and are, at least as of service of this complaint, indirectly infringing the '140 Patent by inducing and/or contributing to direct infringement by customers, end-users, and third parties.

38. Bombardier and/or NetJets actively direct, encourage, aid and abet, and instruct others to practice the subject matter claimed in Litebook's '140 Patent.

39. Such customers, end-users, and third parties include owners, operators, users, and passengers of the Global 7500 and Global 8000 aircraft, including, for example, Ms. Kylie Jenner, who uses a Global 7500 jet featuring the Soleil System as directed, encouraged, and instructed by Bombardier and/or Bombardier's agents.



<https://www.dailymail.co.uk/tvshowbiz/article-11019233/You-want-Kylie-Jenner-brags-private-jets-Travis-Scott.html>.

40. Defendants have taken active steps to induce infringement, such as

advertising the infringing use of the Soleil System.

41. Defendants induce customers, passengers, crew, and buyers/lessees to use the infringing Soleil Lighting System (or similar functionality) in Bombardier aircraft, actively prompting infringement by describing how users can customize and program the lighting system's circadian adjustment setting to automatically adjust lighting settings to fit passenger preferences.

42. NetJets induces customers, crew, end-users, lessees, and passengers to use the Soleil Lighting System (or similar functionality) in their equipped aircraft, actively prompting infringement by instructing them how to adjust lighting settings to fit their preferences.

43. At least as of the service of this complaint, Defendants have been aware of the '140 Patent and how they and their customers infringe one or more claims.

44. Defendants provide instruction, encouragement, and advertisements directed to third parties about how to use the Soleil System to practice the '140 Patent.

NOTICE OF REQUIREMENT OF LITIGATION HOLD

45. Defendants are hereby notified they are legally obligated to locate, preserve, and maintain all records, notes, drawings, documents, data, communications, materials, electronic recordings, audio/video/photographic recordings, and digital files, including edited and unedited or "raw" source material, and other information and tangible things that Defendants know, or reasonably should know, may be relevant to actual or potential claims, counterclaims, defenses, and/or damages by any party or potential party in this lawsuit, whether created or residing in hard copy form or in the form of electronically

stored information (hereafter collectively referred to as “Potential Evidence”).

46. As used above, the phrase “electronically stored information” includes without limitation: computer files (and file fragments), e-mails (both sent and received, whether internally or externally), information concerning e-mails (including but not limited to logs of e-mail history and usage, header information, and deleted but recoverable e-mails), text files (including drafts, revisions, and active or deleted word processing documents), instant messages, audio recordings and files, video footage and files, audio files, photographic footage and files, spreadsheets, databases, calendars, telephone logs, contact manager information, internet usage files, and all other information created, received, or maintained on any and all electronic and/or digital forms, sources and media, including, without limitation, any and all hard disks, removable media, peripheral computer or electronic storage devices, laptop computers, mobile phones, personal data assistant devices, Blackberry devices, iPhones, video cameras and still cameras, and any and all other locations where electronic data is stored. These sources may also include any personal electronic, digital, and storage devices of any and all of Defendants’ agents, resellers, or employees if Defendants’ electronically stored information resides there.

47. Defendants are hereby further notified and forewarned that any alteration, destruction, negligent loss, or unavailability, by act or omission, of any Potential Evidence may result in damages or a legal presumption by the Court and/or jury that the Potential Evidence is not favorable to Defendants’ claims and/or defenses. To avoid such a result, Defendants’ preservation duties include, but are not limited to, the requirement that Defendants immediately notify their agents and employees to halt and/or supervise the

auto-delete functions of Defendants' electronic systems and refrain from deleting Potential Evidence, either manually or through a policy of periodic or automatic deletion.

JURY DEMAND

Litebook hereby demands a trial by jury on all claims, issues and damages so triable.

PRAYER

Litebook prays for the following relief:

- i. Entry of judgment that Defendants have infringed one or more claims of the '140 Patent;
- ii. That the Court enter an order finding that this is an exceptional case under 35 U.S.C. § 285;
- iii. That the Court enter judgment in favor of Litebook against Bombardier Aerospace Corporation and NetJets Aviation, Inc. for all actual, consequential, special, punitive, exemplary, increased, and/or statutory damages pursuant to 35 U.S.C. § 284, including, if necessary, an accounting of all damages; pre- and post-judgment interest in the maximum amounts allowed by law; and reasonable attorney's fees, costs, and expenses incurred in this action;
- iv. That the Court enjoin Bombardier Aerospace Corporation and NetJets Aviation, Inc. from further acts of infringement; and
- v. Such further relief to which Litebook may show itself justly entitled.

Filed: July 18, 2022

Respectfully submitted,

By:



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**ATTORNEYS FOR PLAINTIFF THE
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