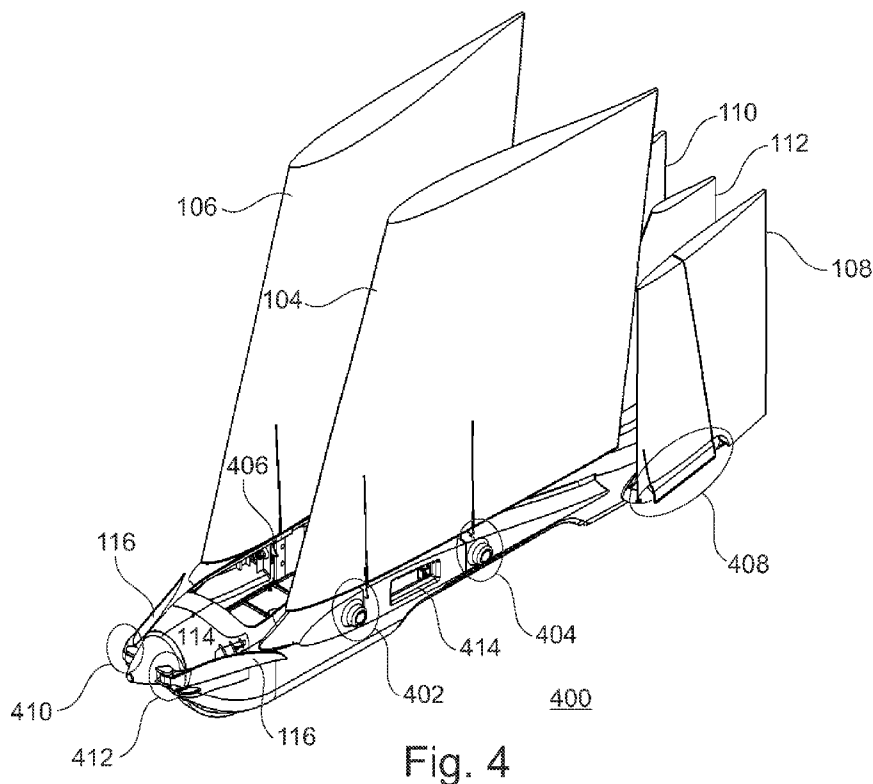




- (51) International Patent Classification:
B64C 39/02 (2006.01)
- (21) International Application Number:
PCT/GB2012/050856
- (22) International Filing Date:
19 April 2012 (19.04.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
1106617.2 19 April 2011 (19.04.2011) GB
- (71) Applicant (for all designated States except US): **BLUE BEAR SYSTEMS RESEARCH LIMITED** [GB/GB];
Building 32, Twinwoods Business Park, Bedford, Bedfordshire MK41 6JE (GB).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): **SNOOK, Michael Alexander**; 34 Loring Road, Sharnbrook, Bedford, Bedfordshire MK44 1JZ (GB). **CAMPBELL-SMITH, Dean**; 58 Farmer Street, Richmond, Victoria 3121 (AU).
- (74) Agent: **HUTCHINSON, Glenn**; Harrison Goddard Foote, Fountain Precinct, Balm Green, Sheffield, South Yorkshire S1 2JA (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: AIR VEHICLE



[Continued on next page]



GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

Declarations under Rule 4.17:

- *of inventorship (Rule 4.17(iv))*

(88) Date of publication of the international search report:

27 December 2012

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2012/050856

A. CLASSIFICATION OF SUBJECT MATTER

INV. B64C39/02

ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B64C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 730 793 A (THURBER JR CHARLES H [US] ET AL) 15 March 1988 (1988-03-15)	1-5,13, 16-18, 23,24, 27-30, 34-40, 42,43
Y	column 3, line 60 - column 4, line 68 column 5, line 44 - column 6, line 14 column 6, lines 41-58 figures ----- -/--	6-9,25, 26



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

10 October 2012

Date of mailing of the international search report

19/10/2012

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Weber, Carlos

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2012/050856

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2005/218260 A1 (CORDER DAVID A [US] ET AL) 6 October 2005 (2005-10-06)	1-3,13, 16-18, 21-24, 27-30, 34-43
Y	paragraphs [0026] - [0033] paragraphs [0038] - [0055] paragraph [0059] figures	6-9,25, 26
X	----- US 5 118 052 A (ALVAREZ CALDERON F ALBERT [US]) 2 June 1992 (1992-06-02)	1-3,13, 16-18, 23,24, 27-30, 34-40, 42,43
Y	column 1, lines 38-68 column 2, line 38 - column 4, line 51 column 5, lines 5-38 figures	6-9,25, 26
X	----- DE 37 10 914 A1 (WINDISCHBAUER FLORIAN DIPL ING [DE]) 20 October 1988 (1988-10-20)	1-3,13, 14, 16-18, 22-24, 27-30, 40-43
Y	column 1, lines 55-66 column 2, line 58 - column 3, line 1 column 4, line 45 - column 5, line 2 column 5, lines 46-67 figures	6-9,25, 26
X	----- WO 2005/023642 A2 (AAI CORP [US]; MILLER STEPHEN W [US]; VELAZQUEZ MATTHEW T [US]) 17 March 2005 (2005-03-17)	1-3,13, 16-21, 23,24, 27,28, 34-40, 42,43
Y	page 1, lines 4-15 page 5, lines 4-11 page 7, line 21 - page 8, line 15 figures	6-9,25, 26
X	----- US 2009/096687 A1 (GENTILMAN RICHARD [US] ET AL) 16 April 2009 (2009-04-16)	31-33
Y	paragraph [0019] paragraph [0038] figure 1	25,26
	----- -/--	

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2012/050856

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2004/211862 A1 (ELAM DARYL B [US]) 28 October 2004 (2004-10-28) paragraphs [0005] - [0008] paragraphs [0015] - [0018] paragraphs [0021] - [0028] paragraphs [0031] - [0033] paragraphs [0036] - [0039] figures -----	6-9
A	FR 2 920 745 A1 (ALTAIR SOC RESPONSABILITE LIMI [FR] ALTAIR [FR]) 13 March 2009 (2009-03-13) the whole document -----	15
A	US 2002/066825 A1 (MIRALLES CARLOS T [US] ET AL) 6 June 2002 (2002-06-06) the whole document -----	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2012/050856

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 44-49
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 44-49

Claims 44 to 49 contain a reference to the drawings rendering the claims so unclear that no meaningful examination is possible. According to Rule 6.2(a) PCT, claims should not contain such references except where absolutely necessary, which is not the case here.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2012/050856

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4730793	A	15-03-1988	NONE
US 2005218260	A1	06-10-2005	AU 2005290315 A1 06-04-2006 CA 2581212 A1 06-04-2006 EP 1799545 A1 27-06-2007 IL 181325 A 30-06-2010 US 2005218260 A1 06-10-2005 WO 2006036183 A1 06-04-2006
US 5118052	A	02-06-1992	NONE
DE 3710914	A1	20-10-1988	NONE
WO 2005023642	A2	17-03-2005	AU 2004270608 A1 17-03-2005 AU 2010210017 A1 02-09-2010 CA 2516614 A1 17-03-2005 EP 1594736 A2 16-11-2005 IL 200701 A 28-06-2012 US 2005274845 A1 15-12-2005 US 2008093501 A1 24-04-2008 WO 2005023642 A2 17-03-2005
US 2009096687	A1	16-04-2009	NONE
US 2004211862	A1	28-10-2004	NONE
FR 2920745	A1	13-03-2009	AT 502847 T 15-04-2011 EP 2188176 A1 26-05-2010 FR 2920745 A1 13-03-2009 WO 2009071755 A1 11-06-2009
US 2002066825	A1	06-06-2002	US 2002066825 A1 06-06-2002 US 2003089821 A1 15-05-2003