REPORTS OF THE SUPERVISION OF STATICS TESTS
16 June 2004
&
17June 2004

COMBO FRONT STRUT / CANTILEVER

COMPANY : **DELTA TRIKES AVIATION DTA.**

AERODROME DE MONTELIMAR-ANCÔNE

26200 MONTELIMAR- FRANCE.

SOMMAIRE

I /ARTICLES TESTED

- TRIKES :

  - COMBO with front strut
  - COMBO Cantilever (without front strut)

COMBO trike with front strut and stainless steel TIG welded vertical mast or without front strut and cantilever vertical mast, are the same identical basic airframe. With these two choices of engines: 2-stroke or 4-stroke.

II / TYPE OF TESTS

Static tests at **472,50 Kg** following the procedures for constructors of (trikes) airframes :

II-1 COMBO with front strut – COMBO Cantilever

- Vertical shock test	3G Flight load - limit
- Vertical shock test	4.5G Ultimate load - limit

II-2 COMBO with front strut – COMBO Cantilever

- Positive load test	4G Flight load - limit
- Positive load test	6G Ultimate load - limit

II-3 COMBO with front strut – COMBO Cantilever

- Frontal shock test (seabelts & Cantilever mast)	9G Flight load - limit
- Frontal shock test (motor mounts 2&4-stroke)	15G Ultimate load - limit

II-4 COMBO with front strut – COMBO Cantilever

- Lateral shock test	1.5 G Ultimate load - limit

III / ACCESSORIES USED IN THE TESTS

- Block and tackle
- Individually weighed sanbags
- Roman balance

IV / PERSONS PRESENT

- Mr JM. DIZIER.
- 4 DTA technical staff

V / TESTS

The tests were carried out on the location of the DTA company at the aerodrome of Montélimar-Ancône (Fr) 16 & 17 June 2004-10-03.

The same trike of each model underwent all the tests in the following chronological order:

- Loads limits :
  - Vertical shock 3G
  - Positif 4G

- Ultimate limits :
  - Vertical shock 4.5G
  - Positive 6G
  - Lateral shock 1,5G
  - Frontal 9G
    15G

V1 COMBO TRIKE AIRFRAME

-Vertical shock test 3G :

The test was carried out following the testing procedure of the DTA company, for a **load limit**: see the testing procedure in appendix 1 of the present report

- Load distribution : conforms to the procedure.
- Load 1361Kg for an exact 1361 Kg.
- Length of test: 2mn

Certified reports : No significant deformation (See appendix 1).

- Vertical shock test 4,5G

The test was carried out following the testing procedure of the DTA company, for a **ultimate limit**: see the testing procedure in appendix 2 of the present report

- Load distribution : conforms to the procedure.
- Load 2070 Kg for an exact 2069.5 Kg.
- Length of test: 3 seconds

Certified reports : No breakage (See appendix 2).

- Positive 4G test

The test was carried out following the testing procedure of the DTA company, for a **load limit**: see the testing procedure in appendix 5 of the present report

- Load distribution : conforms to the procedure.
- Load 1600 Kg for an exact 1593.5 Kg.
- Length of test: 2 mn

Certified reports : No significant deformation (See appendix 5).

- Positive 6G test

The test was carried out following the testing procedure of the DTA company, for a **ultimate limit**: see the testing procedure in appendix 6 of the present report

- Load distribution : conforms to the procedure.
- Load 2424 Kg for an exact 2418.5 Kg.
- Length of test: 3 seconds

Certified reports : No breakage (See appendix 6).

-Frontal shock test 9 G (seatbelts)

The test was carried out following the testing procedure of the DTA company, for a **ultimate limit**: see the testing procedure in appendix 9 of the present report

- Load distribution : conforms to the procedure.
- Load 833 Kg for an exact 810 Kg.
- Length of test: 3 seconds

Certified reports : No breakage and No significant deformation (See appendix 9).

- Frontal shock test 15 G (engine)

The test was carried out following the testing procedure of the DTA company, for a **ultimate limit**: see the testing procedure in appendix 9 of the present report

- Load distribution : conforms to the procedure.
- Load 760 Kg for an exact 750 Kg.
- Length of test: 3 seconds

Certified reports : No breakage and No significant deformation (See appendix 9).

- Lateral shock test 1,5G

The test was carried out following the testing procedure of the DTA company, for a **load limit**: see the testing procedure in appendix 10 of the present report

- Load distribution : conforms to the procedure.
- Loads: -engine 144 Kg for an exact 75 Kg.
  - seatbelts & seats (front & rear) 288 kg for an exact 270 kg
- Length of test: 2 mn

Certified reports : No breakage and No significant deformation (See appendix 10).

V2 TRIKE COMBO CANTILEVER

-Vertical shock test 3G :

The test was carried out following the testing procedure of the DTA company, for a **load limit**: see the testing procedure in appendix 3 of the present report

- Load distribution : conforms to the procedure.
- Load 1365 Kg for an exact 1362.2 Kg.
- Length of test: 2mn

Certified reports : No significant deformation (See appendix 3).

- Vertical shock test 4,5G

The test was carried out following the testing procedure of the DTA company, for a **ultimate limit**: see the testing procedure in appendix 4 of the present report

- Load distribution : conforms to the procedure.
- Load 2071 Kg for an exact 2071 Kg.
- Length of test: 3 seconds

Certified reports : No breakage (See appendix 4).

- Positive 4G test

The test was carried out following the testing procedure of the DTA company, for a **load limit**: see the testing procedure in appendix 7 of the present report

- Load distribution : conforms to the procedure.
- Load 1600 Kg for an exact 1594.7 Kg.
- Length of test: 2 mn

Certified reports : No significant deformation (See appendix 7).

- Positive 6G test

The test was carried out following the testing procedure of the DTA company, for a **ultimate limit**: see the testing procedure in appendix 8 of the present report

- Load distribution : conforms to the procedure.
- Load 2420 Kg for an exact 2419.7 Kg.
- Length of test: 3 seconds

Certified reports : No breakage (See appendix 8).

-Frontal shock test 9 G (seatbelts)

The test was carried out following the testing procedure of the DTA company, for a **ultimate limit**: see the testing procedure in appendix 9 of the present report

- Load distribution : conforms to the procedure.
- Load 833 Kg for an exact 810 Kg.
- Length of test: 3 seconds

Certified reports : No breakage and No significant deformation (See appendix 9).

- Frontal shock test 15 G (engine)

The test was carried out following the testing procedure of the DTA company, for a **ultimate limit**: see the testing procedure in appendix 9 of the present report

- Load distribution : conforms to the procedure.
- Load 760 Kg for an exact 750 Kg.
- Length of test: 3 seconds

Certified reports : No breakage and No significant deformation (See appendix 9).

- Lateral shock test 1,5G

The test was carried out following the testing procedure of the DTA company, for a **load limit**: see the testing procedure in appendix 10 of the present report

- Load distribution : conforms to the procedure.
- Loads: -engine 144 Kg for an exact 75 Kg.
  - seatbelts & seats (front & rear) 288 kg for an exact 270 kg
- Length of test: 2 mn

Certified reports : No breakage and No significant deformation (See appendix 10).

- Frontal shock test 9 G (cantilever mast)

The test was carried out following the testing procedure of the DTA company, for a **ultimate limit**: see the testing procedure in appendix 11 of the present report

- Load distribution : conforms to the procedure.
- Load 543 Kg for an exact 540 Kg.
- Length of test: 3 seconds

Certified reports : No breakage and No significant deformation (See appendix 11).

VI / CONCLUSIONS :

Th static tests **V1-V2** carried out in our presence on the 16th and 17th of June 2004 in the manufacturing works of the **Delta Trikes Aviation (DTA)** company at Montélimar were carried out in a satisfactory manner and conformed to the testing procedure defined by the constructer.
No signifiant permanent deformation or apparent breakages were observed, also tolerances and limits fixed by the constructor during the tests.

Vitrolles, the 29th November 2004
C. BONNAL
Aeronautical Expert

APPENDIX

- ANNEXE 1 Testing procedure vertical shock 3G
  (2 pages)

- ANNEXE 2 Testing procedure vertical shock 4,5G
  (4 pages)

- ANNEXE 3 Testing procedure Cantilever vertical shock 3G
  (2 pages)

- ANNEXE 4 Testing procedure Cantilever vertical shock 4,5G
  (4 pages)

- ANNEXE 5 Testing procedure positive 4G
  (4 pages)

- ANNEXE 6 Testing procedure positive 6G
  (5 pages)

- ANNEXE 7 Testing procedure Cantilever positive 4G
  (2 pages)

- ANNEXE 8 Testing procedure Cantilever positive 6G
  (4 pages)

- ANNEXE 9 Testing procedure Combo & Cantilever frontal shock 9G
  Testing procedure Combo & Cantilever frontal shock 15G
  (3 pages)

- ANNEXE 10 Testing procedure Combo/Combo Cantilever lateral shock 1,5G
  (2 pages)

- ANNEXE 11 Testing procedure Cantilever mast 9G
  (1 page)

- ANNEXE 12 Roman balance weight verification sheet
  (1 page)

APPENDIX 1

COMBO trike test
Vertical shock test at 3G with at MTOW of 472.5 kg
Limiting load factor

Test :

The trike is on ground, on it wheels. After loading, the test must be carried out for at least 2 minutes without, after disassembling, significant deformation.

Method :

The loading was carried out by the use of pre-weighed sandbags, following the table of load distribution.

Load :

It is equal to three times the mass of maximum landing mass, therefore 3x472.5 = 1417.5 Kg (1390 daN).
The trike frame used for the test had a frame-mass of 56.5 kg.

Load distribution :

The distribution was carried out with regards to the mass of the different elements. The mass remained at the level of the seats.

Load (in kg):		**3 G**
Motor-propeller	70,0	210,0
Parachute	15,0	45,0
Front fuel trank brackets	20,0	60,0
Rear fuel tank brackets	30,0	90,0
Front seat	90,0	270,0
Rear seat	90,0	270,0
Wing	60,0	180,0
Frame mass	56,5	56,5
Mass to distribue	41,0	236,0
Maximum Mass	**472,5**	**1417,5**
Loading to be carried out:		1361,0
Loading carried out:		1361

Reports of the tests carried out June 16, and 17 2004:

No significant (meaningful) elastic strain.
The ground clearance of the propeller decreases by 16 cm.

APPENDIX 1


tricycle
COMBO
Tests réalisés sous le contrôle de Bureau Véritas
les 16 et 17 Juin 2004
3 g vertical
à 472.5 kg

APPENDIX 2

COMBO trike test
Vertical shock test at 4.5G with at MTOW of 472.5 kg
Ultimate load factor

Test :

The trike is on ground, on it wheels. After loading, the test must be carried out for at least 3 seconds without breakage.

Method :

The loading was carried out by the use of pre-weighed sandbags, following the table of load distribution.

Load :

It is equal to 4.5 times the mass of maximum landing mass, therefore 4.5x472.5 = 2126.25 Kg (2086 daN). The trike frame used for the test had a frame-mass of 56.5 kg.

Load distribution :

The distribution was carried out with regards to the mass of the different elements. The mass remained at the level of the seats.

Load (in kg) :		**4,5 G**
Motor-propeller	70,0	315,0
Parachute	15,0	67,5
Front fuel trank brackets	20,0	90,0
Rear fuel tank brackets	30,0	135,0
Front seat	90,0	405,0
Rear seat	90,0	405,0
Wing	60,0	270,0
Frame mass	56,5	56,5
Mass to distribue	41,0	382,3
Maximum Mass	**472,5**	**2126,3**
Loading to be carried out:		2069,8
Loading carried out:		2070

Reports of the tests carried out June 16, and 17 2004:

No breakage. See Nomenclature COMBO trike – 4.5G vertical

APPENDIX 2

Nomenclature Tricycle COMBO - extrait

Tests des 16 et 17 Juin 2004
4,5 g vertical

Code	Désignation	Conforme	A changer	Observation
	Cellule			
B0031	BHC 6X20 FIXATION SIEGE AV / SUPPORT C3042	x		
B0039	BHC 6X50 FIXATION SIEGE ARRIERE	x		
B0118	CHC 6X30 SERRAGE BRIDE DE CALE PIED	X		
B0350	H10X120 TENUE SUPPORT C3042	x		
C3001/1/2	CELLULE NUE PEINTE COMBO	x		**CF Observations**
C3036	RONDELLE ERTALON FRICTION SIEGE AVANT	X		
C3037	BAGUE EPAULEE ALU SIEGE AVANT	x		
C3042	PIECE ROTATION SUPPORT SIEGE AVANT	x		
C3043	CHC 8X85/15PTL ROTATION SIEGE AVANT	X		
C3050	CALE PIED TUBULAIRE COMPLET COMBO	x		
C3058	BRIDE DE CALE PIED	x		
C3060	SIEGE AV EXT CARBONE	X		
C3061	SIEGE AR EXT CARBONE	X		
C3070	CHC8X65/15 FIXATION CEINTURE AVANT	x		
CD035	CEINTURE AR COMPLETE	X		
CD036	CEINTURE AV COMPLETE	X		
F0200	PALIER NYLON LISSE DIAM 20 SIEGE AR	x		
SD046	PLOT BUTEE SIEGE ARRIERE	x		
	Atterrisseur (train arrière et fourche)			
A3010	JAMBE DE TRAIN ZICRAL	x		
A3030	AXE DE ROUE AR ALU	x		
A3033	FUSEE PARTIE ACIER FR D	x		
A3034	FUSEE PARTIE ACIER FR G	x		
A3040	FOURCHE COMBO	x		
A3041	BUTEE PEDALE COMBO	x		
A3045	TETON ARRET FREIN ROUE AVANT COMBO	x		
AD026	PEDALE DE GAZ NUE	x		
AD027	PEDALE DE FREIN NUE	x		
AD028	BAGUE EPAULEE DIAM 20 DE PEDALE	x		
AD031	CHC 8X45/12 BIELLETTE/AMORTISSEUR FOURCHE	x		
AD032	CHC 8X40/15A AMORTISSEUR GAUCHE/FOURCHE	x		
AD034	CHC 8X40/15 AMORTISSEUR DROIT/FOURCHE	x		
AD038	ENTRETOISE BIELLETTES FOURCHE	x		
AD040	BIELLETTE DE FOURCHE DROITE INT ET EXT	x		
AD079	AMORTISSEUR DE FOURCHE	x		
AV004	ENTRETOISE DROITE ROUE AV 6'	x		
AV005	ENTRETOISE GAUCHE ROUE AVANT 6'	x		
AV006	AXE DE ROUE 6'		x	**Léger flambage**
AV030	BIELLETTE DE FOURCHE GAUCHE EXT	x		
AV0301	BIELLETTE DE FOURCHE GAUCHE INT	x		
AV038	ROUE LIBRE 15X600X6	x		
AV039	ROUE FREINEE 15X600X6	x		
B0039	BHC 6X50 FIXATION JAMBE/CELLULE ET FUSEE	x		

APPENDIX 2

Nomenclature Tricycle COMBO - extrait / suite - 4,5 g vert.

Code	Désignation	Conforme	A changer	Observation
	Poutre verticale, accroche aile			
D3001	BARRE AVANT COMBO	x		
D3010	POUTRE VERTICALE COMBO	x		
DD003	CHC 10X55/15 INF CABLE SECURITE POUTRE	x		
DD004	CHC 10X85/35P CABLES SECURITE	x		
DD007	CABLE INTERNE DE POUTRE VERT	x		
DD009	CABLE DE SECURITE AILE	x		
DD013	BAGUE EPAULEE ERTALON INF/MEDIAN	x		
DD014	BAGUE EPAULEE ERTALON SUP	x		
DD018	CHC8X53/13PTP TUBE AVANT	x		
DD020	CHC10X95/17 ROTATION POUTRE	x		
DD022	CHC10X110/15 ROTATION PLAQUES AILE	x		
DD023	CHC10X105/15PTP ACCROCHE AILE	x		
DD024	H10X85/15AP VERROUILLAGE POUTRE	x		
DD025	PLAQUE AILE	x		
DD030	EMBASE LIAISON PLAQUES AILE	x		
DV001	POUTRE VERTICALE CANTILEVER NUE PEINTE			o
DV004	CHC10X122/32P CALE INCIDENCE/CABLES SECURITE			o
DV013	BAGUE EPAULEE MEDIAN/INF POUTRE VII			o
DV014	BAGUE EPAULEE SUP POUTRE VII			o
E9066	CUBE ACCROCHAGE AILE	x		
	GMP			
CD037	CHC 8X73/15 BATI 503/582	x		
M3001	BATI MOTEUR 2 TPS	x		
M3020	PROFIL INF APPUI BATI MOTEUR 2 TEMPS	x		
M3021	GOUSSET ALU PROFIL INF BATI 2 TEMPS	x		
M3023	CHC 8X81/12 FIXATION GOUSSETS SUPPORT 2 TPS	x		
MD013	CHC6X10A PLOT AR BATI 2 TPS	x		
MD015	CHC6X78/10 TENUE SANGLE SECU BATI 2 TPS	x		
MD016	SANGLE TEXTILE SECU BATI MOTEUR 2 TPS	x		
M3103	TUBE D SUPPORT JERRICAN 25 L	x		
M3104	TUBE G FILETE SUPPORT JERRICAN 25 L	x		
M3100	SANGLE TEXTILE JERRICANS 2X25 L COMBO	x		
B0182	CHC 8X80 TENUE TUBES JERRICANS COMBO	x		
SD017	PLOT ARRIERE BATI MOTEUR 2 TEMPS	x		
SD018	PLOT INTERNE PLOT ARRIERE BATI MOTEUR 2 TEMPS	x		
SD019	PLOT AVANT 45 SHORE BATI MOTEUR 2 TEMPS	x		

Détails:
Dans le tableau, **"o"** signifie élèment ne figurant pas dans la machine préparée pour le test.
Détail de la boulonnerie et du montage: CF manuel pièces détachées CAPIDE-COMBO

Observations:

Longueur en mm après test sous:	472,5 kg	**4,5g vert**	
Distance axe verrouillage poutre verticale / avant cellule	1860	1855	Voile à peine perceptible poutre inf
Distance axe rotation poutre verticale / axe rotation plaques aile	1606	1606	

Le même tricycle a subi l'ensemble des tests:chargements positifs puis les chocs verticaux, avant et latéraux

APPENDIX 2

tricycle COMBO

APPENDIX 3

COMBO Cantilever trike test
Vertical shock test at 3G with at MTOW of 472.5 kg
Limiting load factor

Test :

The trike is on ground, on it wheels. After loading, the test must be carried out for at least 2 minutes without, after disassembling, significant deformation.

Method :

The loading was carried out by the use of pre-weighed sandbags, following the table of load distribution.

Load :

It is equal to three times the mass of maximum landing mass, therefore 3x472.5 = 1417.5 Kg (1390 daN).
The trike frame used for the test had a frame-mass of 55.3 kg.

Load distribution :

The distribution was carried out with regards to the mass of the different elements. The mass remained at the level of the seats.

Load (in kg) :		**3 G**
Motor-propeller	70,0	210,0
Parachute	15,0	45,0
Front fuel trank brackets	20,0	60,0
Rear fuel tank brackets	30,0	90,0
Front seat	90,0	270,0
Rear seat	90,0	270,0
Wing	60,0	180,0
Frame mass	55,3	55,3
Mass to distribue	42,2	237,2
Maximum Mass	**472,5**	**1417,5**
Loading to be carried out:		1362,2
Loading carried out:		1365

Reports of the tests carried out June 16, and 17 2004:

No significant (meaningful) elastic strain.
The ground clearance of the propeller decreases by 13 cm.

APPENDIX 3

tricycle

COMBO Cantilever

Tests réalisés sous le contrôle de Bureau Véritas
les 16 et 17 Juin 2004

3 g vertical
à 472.5 kg

APPENDIX 4

COMBO Cantilever trike test
Vertical shock test at 4.5G with at MTOW of 472.5 kg
Ultimate load factor

Test :

The trike is on ground, on it wheels. After loading, the test must be carried out for at least 3 seconds without breakage.

Method :

The loading was carried out by the use of pre-weighed sandbags, following the table of load distribution.

Load :

It is equal to 4.5 times the mass of maximum landing mass, therefore 4.5x472.5 = 2126.25 Kg (2086 daN).
The trike frame used for the test had a frame-mass of 55.3 kg.

Load distribution :

The distribution was carried out with regards to the mass of the different elements. The mass remained at the level of the seats.

Load (in kg) :		**4,5 G**
Motor-propeller	70,0	315,0
Parachute	15,0	67,5
Front fuel trank brackets	20,0	90,0
Rear fuel tank brackets	30,0	135,0
Front seat	90,0	405,0
Rear seat	90,0	405,0
Wing	60,0	270,0
Frame mass	55 ,3	55,3
Mass to distribue	42,2	383,5
Maximum Mass	**472,5**	**2126,3**
Loading to be carried out:		2071,0
Loading carried out:		2071

Reports of the tests carried out June 16, and 17 2004:

No breakage. See Nomenclature COMBO trike – Cantilever 4.5G vertical

APPENDIX 4

Nomenclature Tricycle COMBO - extrait

Tests des 16 et 17 Juin 2004
Cantilever 4,5 g vertical

Code	Désignation	Conforme	A changer	Observation
	Cellule			
B0031	BHC 6X20 FIXATION SIEGE AV / SUPPORT C3042	x		
B0039	BHC 6X50 FIXATION SIEGE ARRIERE	x		
B0118	CHC 6X30 SERRAGE BRIDE DE CALE PIED	X		
B0350	H10X120 TENUE SUPPORT C3042	x		
C3001/1/2	CELLULE NUE PEINTE COMBO	x		CF Observations
C3036	RONDELLE ERTALON FRICTION SIEGE AVANT	X		
C3037	BAGUE EPAULEE ALU SIEGE AVANT	x		
C3042	PIECE ROTATION SUPPORT SIEGE AVANT	x		
C3043	CHC 8X85/15PTL ROTATION SIEGE AVANT	X		
C3050	CALE PIED TUBULAIRE COMPLET COMBO	x		
C3058	BRIDE DE CALE PIED	x		
C3060	SIEGE AV EXT CARBONE	X		
C3061	SIEGE AR EXT CARBONE	X		
C3070	CHC8X65/15 FIXATION CEINTURE AVANT	x		
CD035	CEINTURE AR COMPLETE	X		
CD036	CEINTURE AV COMPLETE	X		
F0200	PALIER NYLON LISSE DIAM 20 SIEGE AR	x		
SD046	PLOT BUTEE SIEGE ARRIERE	x		
	Atterrisseur (train arrière et fourche)			
A3010	JAMBE DE TRAIN ZICRAL	x		CF Observations
A3030	AXE DE ROUE AR ALU	x		
A3033	FUSEE PARTIE ACIER FR D	x		
A3034	FUSEE PARTIE ACIER FR G	x		
A3040	FOURCHE COMBO	x		
A3041	BUTEE PEDALE COMBO	x		
A3045	TETON ARRET FREIN ROUE AVANT COMBO	x		
AD026	PEDALE DE GAZ NUE	x		
AD027	PEDALE DE FREIN NUE	x		
AD028	BAGUE EPAULEE DIAM 20 DE PEDALE	x		
AD031	CHC 8X45/12 BIELLETTE/AMORTISSEUR FOURCHE	x		
AD032	CHC 8X40/15A AMORTISSEUR GAUCHE/FOURCHE	x		
AD034	CHC 8X40/15 AMORTISSEUR DROIT/FOURCHE	x		
AD038	ENTRETOISE BIELLETTES FOURCHE	x		
AD040	BIELLETTE DE FOURCHE DROITE INT ET EXT	x		
AD079	AMORTISSEUR DE FOURCHE	x		
AV004	ENTRETOISE DROITE ROUE AV 6'	x		
AV005	ENTRETOISE GAUCHE ROUE AVANT 6'	x		
AV006	AXE DE ROUE 6'	x		
AV030	BIELLETTE DE FOURCHE GAUCHE EXT	x		
AV0301	BIELLETTE DE FOURCHE GAUCHE INT	x		
AV038	ROUE LIBRE 15X600X6	x		
AV039	ROUE FREINEE 15X600X6	x		
B0039	BHC 6X50 FIXATION JAMBE/CELLULE ET FUSEE	x		

APPENDIX 4

Nomenclature Tricycle COMBO - extrait / suite - Cantilever 4,5 g vert.

Code	Désignation	Conforme	A changer	Observation
	Poutre verticale, accroche aile			
D3001	BARRE AVANT COMBO			o
D3010	POUTRE VERTICALE COMBO			o
DD003	CHC 10X55/15 INF CABLE SECURITE POUTRE			o
DD004	CHC 10X85/35P CABLES SECURITE			o
DD007	CABLE INTERNE DE POUTRE VERT			o
DD009	CABLE DE SECURITE AILE	x		
DD013	BAGUE EPAULEE ERTALON INF/MEDIAN			o
DD014	BAGUE EPAULEE ERTALON SUP			o
DD018	CHC8X53/13PTP TUBE AVANT			o
DD020	CHC10X95/17 ROTATION POUTRE		x	Très léger flambage
DD022	CHC10X110/15 ROTATION PLAQUES AILE	x		
DD023	CHC10X105/15PTP ACCROCHE AILE	x		
DD024	H10X85/15AP VERROUILLAGE POUTRE	x		
DD025	PLAQUE AILE	x		
DD030	EMBASE LIAISON PLAQUES AILE	x		
DV001	POUTRE VERTICALE CANTILEVER NUE PEINTE	x		
DV004	CHC10X122/32P CALE INCIDENCE/CABLES SECURITE	x		
DV013	BAGUE EPAULEE MEDIAN/INF POUTRE VII	x		
DV014	BAGUE EPAULEE SUP POUTRE VII	x		
E9066	CUBE ACCROCHAGE AILE	x		
	GMP			
CD037	CHC 8X73/15 BATI 503/582	x		
M3001	BATI MOTEUR 2 TPS	x		
M3020	PROFIL INF APPUI BATI MOTEUR 2 TEMPS	x		
M3021	GOUSSET ALU PROFIL INF BATI 2 TEMPS	x		
M3023	CHC 8X81/12 FIXATION GOUSSETS SUPPORT 2 TPS	x		
MD013	CHC6X10A PLOT AR BATI 2 TPS	x		
MD015	CHC6X78/10 TENUE SANGLE SECU BATI 2 TPS	x		
MD016	SANGLE TEXTILE SECU BATI MOTEUR 2 TPS	x		
M3103	TUBE D SUPPORT JERRICAN 25 L	x		
M3104	TUBE G FILETE SUPPORT JERRICAN 25 L	x		
M3100	SANGLE TEXTILE JERRICANS 2X25 L COMBO	x		
B0182	CHC 8X80 TENUE TUBES JERRICANS COMBO	x		
SD017	PLOT ARRIERE BATI MOTEUR 2 TEMPS	x		
SD018	PLOT INTERNE PLOT ARRIERE BATI MOTEUR 2 TEMPS	x		
SD019	PLOT AVANT 45 SHORE BATI MOTEUR 2 TEMPS	x		

Détails:
Dans le tableau, "**o**" signifie élèment ne figurant pas dans la machine préparée pour le test.
Détail de la boulonnerie et du montage: CF manuel pièces détachées CAPIDE-COMBO

Observations:

Longueur en mm après test sous:	472,5 kg	**4,5g vert**	
Distance axe verrouillage poutre verticale / avant cellule	1850	1845	Voile à peine perceptible poutre inf
Distance axe rotation poutre verticale / axe rotation plaques aile	1628	1628	

A l'issue du test, après 1' sous un chargement à 2071 kg, quelques sacs de 25 kg ont glissé sur le côté droit, modifiant l'équilibre du chargement. Il y a eu plastie, sans rupture, de la jambe de train (A3010).

Le même tricycle a subi l'ensemble des tests:chargements positifs puis les chocs verticaux, avant et latéraux

APPENDIX 4

tricycle COMBO Cantilever

Plastie après 1' sous
4.5 g vertical à 472.5 kg

APPENDIX 5

COMBO trike test
test at 4G with at MTOW of 472.5 kg
Limiting load factor

Test :

The trike is suspended from the wing "hang-point". After loading, the test must be carried out of at least 2 minutes without it being able to be noted, after disassembling of significant (meaningful) deformation.

Method :

The loading was carried out by the use of pre-weighed sandbags, following the table of load distribution.

Load :

It is equal to 4 times the mass of maximum landing mass, minus the weight of the wing, therefore 4x(472.5-60) = 1650 Kg (1619 daN).
The trike frame used for the test had a frame-mass of 56.5 kg.

Load distribution :

The distribution was carried out with regards to the mass of the different elements. The mass was loaded in such a way to keep the trike in the flight position. The mass remained, as best as possible, at the level of the seats.

Load (in kg) :		**4 G**
Motor-propeller	70,0	280,0
Parachute	15,0	60,0
Front fuel trank brackets	20,0	80,0
Rear fuel tank brackets	30,0	120,0
Front seat	90,0	360,0
Rear seat	90,0	360,0
Wing	0,0	0,0
Frame mass	56,5	56,5
Mass to distribue	41,0	333,5
Maximum Mass	**412,5**	**1650,0**
Loading to be carried out:		1593,5
Loading carried out:		1600

Reports of the tests carried out June 16, and 17 2004:

No significant (meaningful) elastic strain.

APPENDIX 5

Nomenclature Tricycle COMBO - extrait

Tests des 16 et 17 Juin 2004
+ 4g

Code	Désignation	Conforme	A changer	Observation
	Cellule			
B0031	BHC 6X20 FIXATION SIEGE AV / SUPPORT C3042	x		
B0039	BHC 6X50 FIXATION SIEGE ARRIERE	x		
B0118	CHC 6X30 SERRAGE BRIDE DE CALE PIED	X		
B0350	H10X120 TENUE SUPPORT C3042	x		
C3001/1/2	CELLULE NUE PEINTE COMBO	x		CF Observations
C3036	RONDELLE ERTALON FRICTION SIEGE AVANT	X		
C3037	BAGUE EPAULEE ALU SIEGE AVANT	x		
C3042	PIECE ROTATION SUPPORT SIEGE AVANT	x		
C3043	CHC 8X85/15PTL ROTATION SIEGE AVANT	X		
C3050	CALE PIED TUBULAIRE COMPLET COMBO	x		
C3058	BRIDE DE CALE PIED	x		
C3060	SIEGE AV EXT CARBONE	X		
C3061	SIEGE AR EXT CARBONE	X		
C3070	CHC8X65/15 FIXATION CEINTURE AVANT	x		
CD035	CEINTURE AR COMPLETE	X		
CD036	CEINTURE AV COMPLETE	X		
F0200	PALIER NYLON LISSE DIAM 20 SIEGE AR	x		
SD046	PLOT BUTEE SIEGE ARRIERE	x		
	Atterrisseur (train arrière et fourche)			
A3010	JAMBE DE TRAIN ZICRAL	x		
A3030	AXE DE ROUE AR ALU	x		
A3033	FUSEE PARTIE ACIER FR D	x		
A3034	FUSEE PARTIE ACIER FR G	x		
A3040	FOURCHE COMBO	x		
A3041	BUTEE PEDALE COMBO	x		
A3045	TETON ARRET FREIN ROUE AVANT COMBO	x		
AD026	PEDALE DE GAZ NUE	x		
AD027	PEDALE DE FREIN NUE	x		
AD028	BAGUE EPAULEE DIAM 20 DE PEDALE	x		
AD031	CHC 8X45/12 BIELLETTE/AMORTISSEUR FOURCHE	x		
AD032	CHC 8X40/15A AMORTISSEUR GAUCHE/FOURCHE	x		
AD034	CHC 8X40/15 AMORTISSEUR DROIT/FOURCHE	x		
AD038	ENTRETOISE BIELLETTES FOURCHE	x		
AD040	BIELLETTE DE FOURCHE DROITE INT ET EXT	x		
AD079	AMORTISSEUR DE FOURCHE	x		
AV004	ENTRETOISE DROITE ROUE AV 6'	x		
AV005	ENTRETOISE GAUCHE ROUE AVANT 6'	x		
AV006	AXE DE ROUE 6'	x		
AV030	BIELLETTE DE FOURCHE GAUCHE EXT	x		
AV0301	BIELLETTE DE FOURCHE GAUCHE INT	x		
AV038	ROUE LIBRE 15X600X6	x		
AV039	ROUE FREINEE 15X600X6	x		
B0039	BHC 6X50 FIXATION JAMBE/CELLULE ET FUSEE	x		

APPENDIX 5

Nomenclature Tricycle COMBO - extrait / suite - + 4g

Code	Désignation	Conforme	A changer	Observation
	Poutre verticale, accroche aile			
D3001	BARRE AVANT COMBO	x		
D3010	POUTRE VERTICALE COMBO	x		CF Observations
DD003	CHC 10X55/15 INF CABLE SECURITE POUTRE	x		
DD004	CHC 10X85/35P CABLES SECURITE	x		
DD007	CABLE INTERNE DE POUTRE VERT	x		
DD009	CABLE DE SECURITE AILE	x		
DD013	BAGUE EPAULEE ERTALON INF/MEDIAN	x		
DD014	BAGUE EPAULEE ERTALON SUP	x		
DD018	CHC8X53/13PTP TUBE AVANT	x		
DD020	CHC10X95/17 ROTATION POUTRE	x		
DD022	CHC10X110/15 ROTATION PLAQUES AILE	x		
DD023	CHC10X105/15PTP ACCROCHE AILE	x		
DD024	H10X85/15AP VERROUILLAGE POUTRE	x		
DD025	PLAQUE AILE	x		
DD030	EMBASE LIAISON PLAQUES AILE	x		
DV001	POUTRE VERTICALE CANTILEVER NUE PEINTE			o
DV004	CHC10X122/32P CALE INCIDENCE/CABLES SECURITE			o
DV013	BAGUE EPAULEE MEDIAN/INF POUTRE VII			o
DV014	BAGUE EPAULEE SUP POUTRE VII			o
E9066	CUBE ACCROCHAGE AILE	x		
	GMP			
CD037	CHC 8X73/15 BATI 503/582	x		
M3001	BATI MOTEUR 2 TPS	x		
M3020	PROFIL INF APPUI BATI MOTEUR 2 TEMPS	x		
M3021	GOUSSET ALU PROFIL INF BATI 2 TEMPS	x		
M3023	CHC 8X81/12 FIXATION GOUSSETS SUPPORT 2 TPS	x		
MD013	CHC6X10A PLOT AR BATI 2 TPS	x		
MD015	CHC6X78/10 TENUE SANGLE SECU BATI 2 TPS	x		
MD016	SANGLE TEXTILE SECU BATI MOTEUR 2 TPS	x		
M3103	TUBE D SUPPORT JERRICAN 25 L	x		
M3104	TUBE G FILETE SUPPORT JERRICAN 25 L	x		
M3100	SANGLE TEXTILE JERRICANS 2X25 L COMBO	x		
B0182	CHC 8X80 TENUE TUBES JERRICANS COMBO	x		
SD017	PLOT ARRIERE BATI MOTEUR 2 TEMPS	x		
SD018	PLOT INTERNE PLOT ARRIERE BATI MOTEUR 2 TEMPS	x		
SD019	PLOT AVANT 45 SHORE BATI MOTEUR 2 TEMPS	x		

Détails:
Dans le tableau, "**o**" signifie élèment ne figurant pas dans la machine préparée pour le test.
Détail de la boulonnerie et du montage: CF manuel pièces détachées CAPIDE-COMBO

Observations:

Longueur en mm après test sous:	472,5 kg	+ 4g	
Distance axe verrouillage poutre verticale / avant cellule	1866	1860	Voile à peine perceptible poutre inf
Distance axe rotation poutre verticale / axe rotation plaques aile	1602	1606	Voile à peine perceptible poutre

Le même tricycle a subi l'ensemble des tests:chargements positifs puis les chocs verticaux, avant et latéraux

APPENDIX 5

tricycle COMBO + 4 g à 472.5 kg

Tests réalisés sous le contrôle de Bureau Véritas
les 16 et 17 juin 2004

APPENDIX 6

COMBO trike test
test at 6G with at MTOW of 472.5 kg
Ultimate load factor

Test :

The trike is suspended from the wing "hang-point". After loading, the test must be carried out for at least 3 seconds without breakage.

Method :

The loading was carried out by the use of pre-weighed sandbags, following the table of load distribution.

Load :

It is equal to 4 times the mass of maximum landing mass, minus the weight of the wing, therefore
6x(472.5-60) = 2475 Kg (2428 daN).
The trike frame used for the test had a frame-mass of 56.5 kg.

Load distribution :

The distribution was carried out with regards to the mass of the different elements. The mass was loaded in such a way to keep the trike in the flight position. The mass remained, as best as possible, at the level of the seats.

Load (in kg) ::		**6 G**
Motor-propeller	70,0	420,0
Parachute	15,0	90,0
Front fuel trank brackets	20,0	120,0
Rear fuel tank brackets	30,0	180,0
Front seat	90,0	540,0
Rear seat	90,0	540,0
Wing	0,0	0,0
Frame mass	56,5	56,5
Mass to distribue	41,0	528,5
Maximum Mass	**412,5**	**2475,0**
Loading to be carried out:		2418,5
Loading carried out:		2424

Reports of the tests carried out June 16, and 17 2004:

No breakage. See Nomenclature COMBO trike + 6g.

APPENDIX 6

Nomenclature Tricycle COMBO - extrait

Tests des 16 et 17 Juin 2004
+ 6g

Code	Désignation	Conforme	A changer	Observation
	Cellule			
B0031	BHC 6X20 FIXATION SIEGE AV / SUPPORT C3042	x		
B0039	BHC 6X50 FIXATION SIEGE ARRIERE	x		
B0118	CHC 6X30 SERRAGE BRIDE DE CALE PIED	X		
B0350	H10X120 TENUE SUPPORT C3042	x		
C3001/1/2	CELLULE NUE PEINTE COMBO	x		
C3036	RONDELLE ERTALON FRICTION SIEGE AVANT	X		
C3037	BAGUE EPAULEE ALU SIEGE AVANT	x		
C3042	PIECE ROTATION SUPPORT SIEGE AVANT	x		
C3043	CHC 8X85/15PTL ROTATION SIEGE AVANT	X		
C3050	CALE PIED TUBULAIRE COMPLET COMBO	x		
C3058	BRIDE DE CALE PIED	x		
C3060	SIEGE AV EXT CARBONE	X		
C3061	SIEGE AR EXT CARBONE	X		
C3070	CHC8X65/15 FIXATION CEINTURE AVANT	x		
CD035	CEINTURE AR COMPLETE	X		
CD036	CEINTURE AV COMPLETE	X		
F0200	PALIER NYLON LISSE DIAM 20 SIEGE AR	x		
SD046	PLOT BUTEE SIEGE ARRIERE	x		
	Atterrisseur (train arrière et fourche)			
A3010	JAMBE DE TRAIN ZICRAL	x		
A3030	AXE DE ROUE AR ALU	x		
A3033	FUSEE PARTIE ACIER FR D	x		
A3034	FUSEE PARTIE ACIER FR G	x		
A3040	FOURCHE COMBO	x		
A3041	BUTEE PEDALE COMBO	x		
A3045	TETON ARRET FREIN ROUE AVANT COMBO	x		
AD026	PEDALE DE GAZ NUE	x		
AD027	PEDALE DE FREIN NUE	x		
AD028	BAGUE EPAULEE DIAM 20 DE PEDALE	x		
AD031	CHC 8X45/12 BIELLETTE/AMORTISSEUR FOURCHE	x		
AD032	CHC 8X40/15A AMORTISSEUR GAUCHE/FOURCHE	x		
AD034	CHC 8X40/15 AMORTISSEUR DROIT/FOURCHE	x		
AD038	ENTRETOISE BIELLETTES FOURCHE	x		
AD040	BIELLETTE DE FOURCHE DROITE INT ET EXT	x		
AD079	AMORTISSEUR DE FOURCHE	x		
AV004	ENTRETOISE DROITE ROUE AV 6'	x		
AV005	ENTRETOISE GAUCHE ROUE AVANT 6'	x		
AV006	AXE DE ROUE 6'	x		
AV030	BIELLETTE DE FOURCHE GAUCHE EXT	x		
AV0301	BIELLETTE DE FOURCHE GAUCHE INT	x		
AV038	ROUE LIBRE 15X600X6	x		
AV039	ROUE FREINEE 15X600X6	x		
B0039	BHC 6X50 FIXATION JAMBE/CELLULE ET FUSEE	x		

APPENDIX 6

Nomenclature Tricycle COMBO - extrait / suite - + 6g

Code	Désignation	Conforme	A changer	Observation
	Poutre verticale, accroche aile			
D3001	BARRE AVANT COMBO	x		
D3010	POUTRE VERTICALE COMBO		x	**CF Observations**
DD003	CHC 10X55/15 INF CABLE SECURITE POUTRE	x		
DD004	CHC 10X85/35P CABLES SECURITE	x		
DD007	CABLE INTERNE DE POUTRE VERT	x		
DD009	CABLE DE SECURITE AILE	x		
DD013	BAGUE EPAULEE ERTALON INF/MEDIAN	x		
DD014	BAGUE EPAULEE ERTALON SUP	x		
DD018	CHC8X53/13PTP TUBE AVANT		x	**Léger flambage**
DD020	CHC10X95/17 ROTATION POUTRE		x	**Flambage**
DD022	CHC10X110/15 ROTATION PLAQUES AILE		x	**Flambage**
DD023	CHC10X105/15PTP ACCROCHE AILE		x	**Flambage**
DD024	H10X85/15AP VERROUILLAGE POUTRE	x		
DD025	PLAQUE AILE	x		
DD030	EMBASE LIAISON PLAQUES AILE	x		
DV001	POUTRE VERTICALE CANTILEVER NUE PEINTE			**o**
DV004	CHC10X122/32P CALE INCIDENCE/CABLES SECURITE			**o**
DV013	BAGUE EPAULEE MEDIAN/INF POUTRE VII			**o**
DV014	BAGUE EPAULEE SUP POUTRE VII			**o**
E9066	CUBE ACCROCHAGE AILE	x		
	GMP			
CD037	CHC 8X73/15 BATI 503/582		x	**Léger flambage**
M3001	BATI MOTEUR 2 TPS	x		
M3020	PROFIL INF APPUI BATI MOTEUR 2 TEMPS	x		
M3021	GOUSSET ALU PROFIL INF BATI 2 TEMPS		x	**Matage au niveau percages inf**
M3023	CHC 8X81/12 FIXATION GOUSSETS SUPPORT 2 TPS	x		
MD013	CHC6X10A PLOT AR BATI 2 TPS	x		
MD015	CHC6X78/10 TENUE SANGLE SECU BATI 2 TPS	x		
MD016	SANGLE TEXTILE SECU BATI MOTEUR 2 TPS	x		
M3103	TUBE D SUPPORT JERRICAN 25 L	x		
M3104	TUBE G FILETE SUPPORT JERRICAN 25 L	x		
M3100	SANGLE TEXTILE JERRICANS 2X25 L COMBO	x		
B0182	CHC 8X80 TENUE TUBES JERRICANS COMBO	x		
SD017	PLOT ARRIERE BATI MOTEUR 2 TEMPS	x		
SD018	PLOT INTERNE PLOT ARRIERE BATI MOTEUR 2 TEMPS	x		
SD019	PLOT AVANT 45 SHORE BATI MOTEUR 2 TEMPS	x		

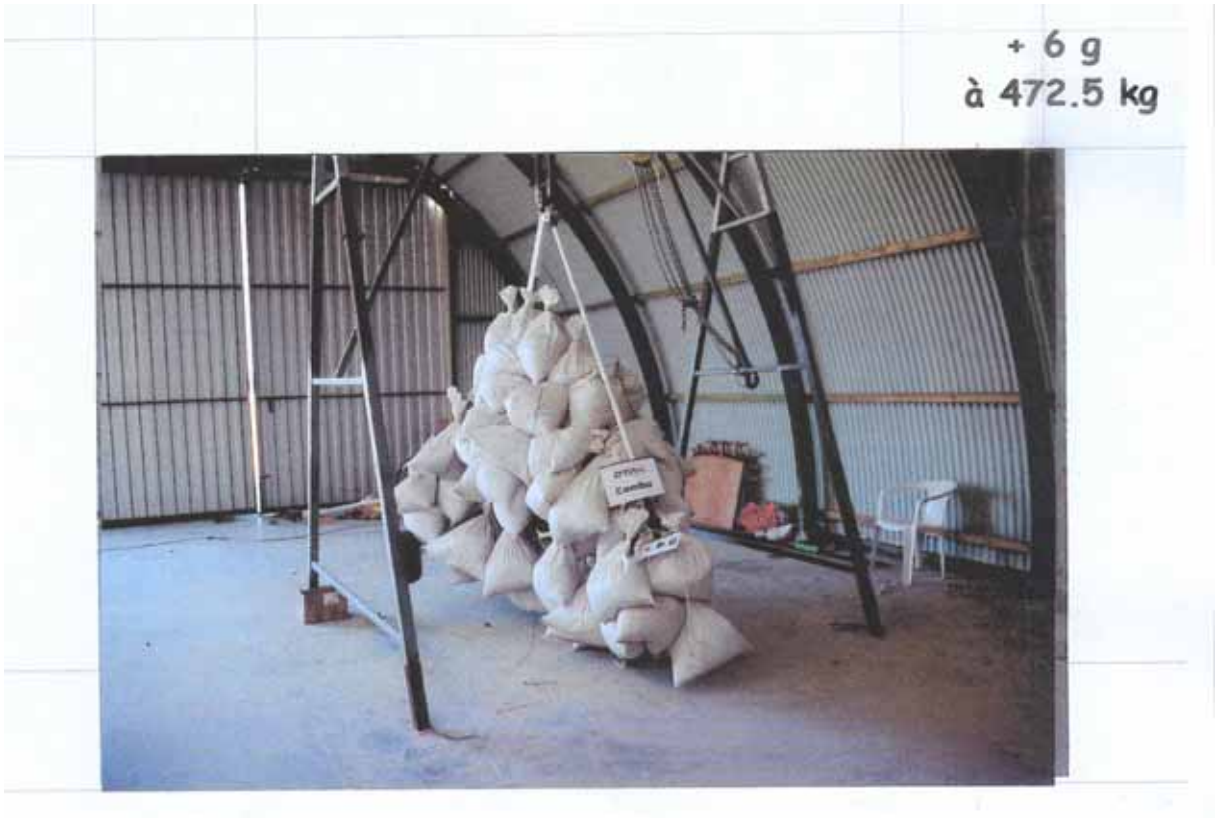
Détails:
Dans le tableau, "**o**" signifie élèment ne figurant pas dans la machine préparée pour le test.
Détail de la boulonnerie et du montage: CF manuel pièces détachées CAPIDE-COMBO

Observations:
A l'issue du test, après 4 minutes sous chargement à 2424 kg, se produit une déformation importante de la poutre verticale, puis de la poutre inférieure de la cellule, sans rupture.

Le même tricycle a subi l'ensemble des tests:chargements positifs puis les chocs verticaux, avant et latéraux

APPENDIX 6

tricycle COMBO



APPENDIX 6

tricycle COMBO

Tests réalisés sous le contrôle de Bureau Véritas
les 16 et 17 Juin 2004

Plastie après
4' à 6g

APPENDIX 7

COMBO Cantilever trike test
test at 4G with at MTOW of 472.5 kg
Limiting load factor

Test :

The trike is suspended from the wing "hang-point". After loading, the test must be carried out of at least 2 minutes without it being able to be noted, after disassembling of significant (meaningful) deformation.

Method :

The loading was carried out by the use of pre-weighed sandbags, following the table of load distribution.

Load :

It is equal to 4 times the mass of maximum landing mass, minus the weight of the wing, therefore 4x(472.5-60) = 1650 Kg (1619 daN).
The trike frame used for the test had a frame-mass of 55.3 kg.

Load distribution :

The distribution was carried out with regards to the mass of the different elements. The mass was loaded in such a way to keep the trike in the flight position. The mass remained, as best as possible, at the level of the seats.

Load (in kg) ::		**4 G**
Motor-propeller	70,0	280,0
Parachute	15,0	60,0
Front fuel trank brackets	20,0	80,0
Rear fuel tank brackets	30,0	120,0
Front seat	90,0	360,0
Rear seat	90,0	360,0
Wing	0,0	0,0
Frame mass	55,3	55,3
Mass to distribue	42,2	334,7
Maximum Mass	**412,5**	**1650,0**
Loading to be carried out:		1594,7
Loading carried out:		1600

Reports of the tests carried out June 16, and 17 2004:

No significant (meaningful) elastic strain.

APPENDIX 7

tricycle

COMBO Cantilever

Tests réalisés sous le contrôle de Bureau Véritas
les 16 et 17 juin 2004

+ 4 g
à 472.5 kg

APPENDIX 8

COMBO Cantilever trike test
test at 6G with at MTOW of 472.5 kg
Ultimate load factor

Test :

The trike is suspended from the wing "hang-point". After loading, the test must be carried out for at least 3 seconds without breakage.

Method :

The loading was carried out by the use of pre-weighed sandbags, following the table of load distribution.

Load :

It is equal to 6 times the mass of maximum landing mass, minus the weight of the wing, therefore
6x(472.5-60) = 2475 Kg (2428 daN).
The trike frame used for the test had a frame-mass of 55.3 kg.

Load distribution :

The distribution was carried out with regards to the mass of the different elements. The mass was loaded in such a way to keep the trike in the flight position. The mass remained, as best as possible, at the level of the seats.

Load (in kg) :		**6 G**
Motor-propeller	70,0	420,0
Parachute	15,0	90,0
Front fuel trank brackets	20,0	120,0
Rear fuel tank brackets	30,0	180,0
Front seat	90,0	540,0
Rear seat	90,0	540,0
Wing	0,0	0,0
Frame mass	55,3	55,3
Mass to distribue	42,2	529,7
Maximum Mass	**412,5**	**2475,0**
Loading to be carried out:		2419,7
Loading carried out:		2420

Reports of the tests carried out June 16, and 17 2004:

No breakage. See Nomenclature COMBO trike Cantilever + 6g.

APPENDIX 8

Nomenclature Tricycle COMBO - extrait

Tests des 16 et 17 Juin 2004
Cantilever + 6g

Code	Désignation	Conforme	A changer	Observation
	Cellule			
B0031	BHC 6X20 FIXATION SIEGE AV / SUPPORT C3042	x		
B0039	BHC 6X50 FIXATION SIEGE ARRIERE	x		
B0118	CHC 6X30 SERRAGE BRIDE DE CALE PIED	X		
B0350	H10X120 TENUE SUPPORT C3042	x		
C3001/1/2	CELLULE NUE PEINTE COMBO	x		
C3036	RONDELLE ERTALON FRICTION SIEGE AVANT	X		
C3037	BAGUE EPAULEE ALU SIEGE AVANT	x		
C3042	PIECE ROTATION SUPPORT SIEGE AVANT	x		
C3043	CHC 8X85/15PTL ROTATION SIEGE AVANT	X		
C3050	CALE PIED TUBULAIRE COMPLET COMBO	x		
C3058	BRIDE DE CALE PIED	x		
C3060	SIEGE AV EXT CARBONE	X		
C3061	SIEGE AR EXT CARBONE	X		
C3070	CHC8X65/15 FIXATION CEINTURE AVANT	x		
CD035	CEINTURE AR COMPLETE	X		
CD036	CEINTURE AV COMPLETE	X		
F0200	PALIER NYLON LISSE DIAM 20 SIEGE AR	x		
SD046	PLOT BUTEE SIEGE ARRIERE	x		
	Atterrisseur (train arrière et fourche)			
A3010	JAMBE DE TRAIN ZICRAL	x		
A3030	AXE DE ROUE AR ALU	x		
A3033	FUSEE PARTIE ACIER FR D	x		
A3034	FUSEE PARTIE ACIER FR G	x		
A3040	FOURCHE COMBO	x		
A3041	BUTEE PEDALE COMBO	x		
A3045	TETON ARRET FREIN ROUE AVANT COMBO	x		
AD026	PEDALE DE GAZ NUE	x		
AD027	PEDALE DE FREIN NUE	x		
AD028	BAGUE EPAULEE DIAM 20 DE PEDALE	x		
AD031	CHC 8X45/12 BIELLETTE/AMORTISSEUR FOURCHE	x		
AD032	CHC 8X40/15A AMORTISSEUR GAUCHE/FOURCHE	x		
AD034	CHC 8X40/15 AMORTISSEUR DROIT/FOURCHE	x		
AD038	ENTRETOISE BIELLETTES FOURCHE	x		
AD040	BIELLETTE DE FOURCHE DROITE INT ET EXT	x		
AD079	AMORTISSEUR DE FOURCHE	x		
AV004	ENTRETOISE DROITE ROUE AV 6'	x		
AV005	ENTRETOISE GAUCHE ROUE AVANT 6'	x		
AV006	AXE DE ROUE 6'	x		
AV030	BIELLETTE DE FOURCHE GAUCHE EXT	x		
AV0301	BIELLETTE DE FOURCHE GAUCHE INT	x		
AV038	ROUE LIBRE 15X600X6	x		
AV039	ROUE FREINEE 15X600X6	x		
B0039	BHC 6X50 FIXATION JAMBE/CELLULE ET FUSEE	x		

APPENDIX 8

Nomenclature Tricycle COMBO - extrait / suite - Cantilever + 6g

Code	Désignation	Conforme	A changer	Observation
	Poutre verticale, accroche aile			
D3001	BARRE AVANT COMBO			o
D3010	POUTRE VERTICALE COMBO			o
DD003	CHC 10X55/15 INF CABLE SECURITE POUTRE			o
DD004	CHC 10X85/35P CABLES SECURITE			o
DD007	CABLE INTERNE DE POUTRE VERT			o
DD009	CABLE DE SECURITE AILE	x		
DD013	BAGUE EPAULEE ERTALON INF/MEDIAN			o
DD014	BAGUE EPAULEE ERTALON SUP			o
DD018	CHC8X53/13PTP TUBE AVANT			o
DD020	CHC10X95/17 ROTATION POUTRE		x	Flambage
DD022	CHC10X110/15 ROTATION PLAQUES AILE		x	Flambage
DD023	CHC10X105/15PTP ACCROCHE AILE		x	Flambage
DD024	H10X85/15AP VERROUILLAGE POUTRE	x		
DD025	PLAQUE AILE	x		
DD030	EMBASE LIAISON PLAQUES AILE	x		
DV001	POUTRE VERTICALE CANTILEVER NUE PEINTE	x		
DV004	CHC10X122/32P CALE INCIDENCE/CABLES SECURITE	x		
DV013	BAGUE EPAULEE MEDIAN/INF POUTRE VII	x		
DV014	BAGUE EPAULEE SUP POUTRE VII	x		
E9066	CUBE ACCROCHAGE AILE	x		
	GMP			
CD037	CHC 8X73/15 BATI 503/582		x	Léger flambage
M3001	BATI MOTEUR 2 TPS	x		
M3020	PROFIL INF APPUI BATI MOTEUR 2 TEMPS	x		
M3021	GOUSSET ALU PROFIL INF BATI 2 TEMPS		x	Matage au niveau percages inf
M3023	CHC 8X81/12 FIXATION GOUSSETS SUPPORT 2 TPS	x		
MD013	CHC6X10A PLOT AR BATI 2 TPS	x		
MD015	CHC6X78/10 TENUE SANGLE SECU BATI 2 TPS	x		
MD016	SANGLE TEXTILE SECU BATI MOTEUR 2 TPS	x		
M3103	TUBE D SUPPORT JERRICAN 25 L	x		
M3104	TUBE G FILETE SUPPORT JERRICAN 25 L	x		
M3100	SANGLE TEXTILE JERRICANS 2X25 L COMBO	x		
B0182	CHC 8X80 TENUE TUBES JERRICANS COMBO	x		
SD017	PLOT ARRIERE BATI MOTEUR 2 TEMPS	x		
SD018	PLOT INTERNE PLOT ARRIERE BATI MOTEUR 2 TEMPS	x		
SD019	PLOT AVANT 45 SHORE BATI MOTEUR 2 TEMPS	x		

Détails:
Dans le tableau, **"o"** signifie élèment ne figurant pas dans la machine préparée pour le test.
Détail de la boulonnerie et du montage: CF manuel pièces détachées CAPIDE-COMBO

Observations:

Longueur en mm après test sous:	472,5 kg	**+ 6g**
Distance axe verrouillage poutre verticale / avant cellule	1845	1845
Distance axe rotation poutre verticale / axe rotation plaques aile	1628	1628

Le même tricycle a subi l'ensemble des tests:chargements positifs puis les chocs verticaux, avant et latéraux

APPENDIX 8

tricycle | COMBO Cantilever

Tests réalisés sous le contrôle de Bureau Véritas
les 16 et 17 juin 2004

+ 6 g
à 472.5 kg

APPENDIX 9

COMBO & COMBO Cantilever trike test
Load frontal shock test at 9G on the seatbelts
15G on the engine mount
Ultimate load factor

Test :

The trike is held by a cable fixed on the airframe at the level of the connection of the rear suspension with the base beam. After loading, the test must be carried out for at least 3 seconds without any breakage.
.

Method :

The loading was carried out by uses of pre-weighed sandbags, initially for each belt (front seatbelt then the rear) finally for the engine mount.

Loading :

For each seatbelt, it must be equal 9 times the standard mass => 9x90 kg = 810 Kg (794daN).
For the 2-stroke engine mount, it must be equal to 15 times 50 Kg => 15x50 kg = 750 kg (736 daN).

Load distribution :

A cable is fastened to the item to be tested (front or rear seatbelt, engine mount). The cable is passed through a pulley, wich is fixed at the top of a tetrahedron, and then is attached to a hook, on which the sandbags are hung..

Load (in kg) :		9 G	15 G	Effective load
2-stroke engine mount	50,0		750,0	760
Rear seatbelt	90,0	810,0		833
Front seatbelt	90,0	810,0		833

Reports of the tests carried out June 16, and 17 2004:

No significant (meaningful) elastic strain.

Note :

- The seatbelt mounts are the same on all models
- The fuel tank is fastened under the airframe and is not in a position that will be effected in a frontal shock test

APPENDIX 9

tricycle

COMBO et COMBO Cantilever

9 g
ceinture av.

Tests réalisés sous le contrôle de Bureau Véritas
les 16 et 17 Juin 2004

9 g
ceinture ar.

APPENDIX 9

tricycle

COMBO et COMBO Cantilever

15 g
bâti moteur
2 tps 50 kg

Tests réalisés sous le contrôle de Bureau Véritas
les 16 et 17 Juin 2004

APPENDIX 10

COMBO & COMBO Cantilever trike test
Lateral shock test at 1.5G
Load limit factor

Test :

The trike is held by a cable fixed on the airframe at the level of the connection of the rear suspension with the base beam and at the front of the airframe. After loading, the test must be carried out of at least 2 minutes without it being able to be noted, after disassembling of significant (meaningful) deformation.

Method :

The loading was carried out by uses of pre-weighed sandbags, initially for each belt (front seatbelt then the rear) finally for the engine mount.

Loading :

For each seatbelt, it must be equal 1.5 times the standard mass => (1.5x90 kg)x2 = 270 Kg (265daN).
For the 2-stroke engine mount, it must be equal to 15 times 50 Kg => 1.5x50 kg = 75 kg (73.6 daN).

Load distribution :

A cable is fastened to the item to be tested (front and rear seatbelt, engine mount). The cable is passed through a pulley, wich is fixed at the top of a tetrahedron, and then is attached to a hook, on which the sandbags are hung..

Load (in kg) :		1,5 G	Effective load
2-stroke engine mount	50,0	75,0	144
Front & rear seatbelt	90,0 x 2	270,0	288

Reports of the tests carried out June 16, and 17 2004:

No significant (meaningful) elastic strain.

Note :

- The seatbelt mounts are the same on all models

APPENDIX 10

APPENDIX 11

Test details for VOYAGEUR II ou COMBO Cantilever mast
Frontal shock test at 9G
Ultimate load factor

Test :

The cantilever mast is fixed at it's the points of rotation (base) and lock (middle). After loading, the test must be carried out for at least 3 seconds without breakage.

Method :

The loading was carried out by uses of pre-weighed sandbags

Loading :

The load is equal to 9 times the full weight of the wing, 60 kg => 9x60 kg = 540 Kg (530 daN).

Load distribution :

A cable is fastened to the hang point of the mast (top). A cable is passed through a pulley, wich is fixed at the top of a tetrahedron, and then is attached to a hook, on which the sandbags are hung.. Load of 543 kg.

Reports of the tests carried out June 16, and 17 2004:

No significant (meaningful) elastic strain.

APPENDIX 12

FICHE RAPPORT D'ESSAIS METROLOGIQUES — N° 000900

Suivant la norme NF - EN - 45.501 - 1992 / AC 1993

Société : ARA. Service : Adresse : Montélimar Code Postal : 26200 Date : 2/12/03

emt : Erreur Maximale tolérée à charge considérée

	W1	W2	W3
Max. :	500 k		
Min. :			
e :	100 g		
d :			
Classe :	III		

N° Interne : 8
Localisation :
Marque : DURU
Type : Romane
N° Série :
Métrologie Légale : oui (non)

Périodicité : 1 mois — 3 mois — 6 mois — 1 an — 2 ans

Masses Étalons Utilisées Classe : Certificat d'étalonnage N°

Unité en g - (Kg) - T

CONTRÔLES PRÉALABLES :

ECART	Avant Réglage Bon	Avant Réglage Mauvais	Après Réglage Bon	Après Réglage Mauvais
Essais d'exactitude à zéro :	✓	☐	☐	☐
Essais de Tare : (10e)	✓	☐	☐	☐
Essais de Mobilité : (Max/2)	✓	☐	☐	☐

	Bon	Mauvais
Imprimante	☐	☐
Calculateur	☐	☐
Répétiteur	☐	☐

FIDÉLITÉ :

N°	Masse Conventionnelle	Indication Lue Avant Réglage	Indication Lue Après Réglage	Ecart
1	200	200		0
2	200	200		0
3	200	200		0
4				
5				
6				

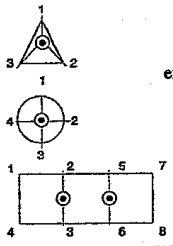
emt Service : ± 20g

emt Primitif :

Conforme : oui ✓ non ☐

EXCENTRATION :

N°	Masse Conventionnelle	Indication Lue Avant Réglage	Indication Lue Après Réglage	Ecart
0				
1				
2				
3				
4				



emt Service :

Conforme : oui ☐ non ☐

JUSTESSE :

N°	Masses Conventionnelles	Valeur lue croissante Avant Ajustage	Valeur lue croissante Après Ajustage	Ecart	Valeur lue décroissante Avant Ajustage	Valeur lue décroissante Après Ajustage	Ecart	emt
1	20	20		0	20		0	± 20
2	40	40		0	40		0	± 20
3	60	60		0	60		0	± 30
4	80	80		0	80		0	± 30
5	100	100		0				± 30

Conforme : oui ✓ non ☐

(qu'à chaque montée et chaque descente le poids poing est mis en dernier et enlevé en dernier)

SANCTION : Conforme ✓ Non Conforme ☐

OBSERVATIONS :

ISO 9001 N° 87431

INTERVENANT : Signature

CLIENT : Signature

COLOMB ATELIERS PRÉPARATIONS AÉRONAUTIQUES Aéroport Sud - 26200 MONTÉLIMAR