

FUTURA

MANUAL

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APCO Aviation Ltd. 

APCO Aviation Ltd.



OWNERS MANUAL

SIZES: 27, 28, 30, 32

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GENERAL DESCRIPTION AND TECHNICAL DATA OF LINE OF "FUTURA" PARAGLIDERS

CONGRATULATIONS UPON YOUR CHOICE OF
APCO AVIATION'S FUTURA PARAGLIDER

SIZE	27	28	30	32
Cells	(41x2)+6	(42x2)+6	(45x2)+6	(48x2)+6
Area, m ²	26.6	27.3	29.5	31.7
Area (projected) m ²	23.66	24.0	25.87	27.22
Span (with stabilizer) m	11.62	11.87	12.65	13.42
Span (projected) m	9.76	9.81	10.43	10.7
A/R	0.7	0.76	0.84	0.87
A/R (projected)	0.7	0.76	0.84	0.87
Pilot weight, kg (hook in)	65-80	75-90	85-105	100-120
Weight of Canopy	7.0	7.0	7.5	8.0
Root cord mm	2830	2830	2830	2830
Tip cord mm	574	574	574	574
V-min km/h	22	22	22	22
V-trim, km/h	34	34	34	34
max, km/h incl. speed system	50	50	50	50
Min sink, m/s op" pilot weight	1	1	1	1
Total lines length, m	352.4	366	382.9	416.6
Lines top Dyneema 0.8 mm	200 lbs	200 lbs	200 lbs	200 lbs
Medium floor Kevlar 1.1 mm	80 kg	80 kg	80 kg	80 kg
Bottom Kevlar 1.7 mm	150 kg	150 kg	150 kg	150 kg
Bottom Kevlar 2.2 mm	220 kg	220 kg	220 kg	220 kg
Length of lines on B, without V-lines m	7.27	6.97	7.27	7.57
Soil cloth: Ripstop 46 gr/m ² "zero porosity", nylon Rib reinforcement Trilam 80 gr/m ²				
Certification	PERFORMANCE			
Warranty:	Three years/250 hours			

WARNING: This is not a training manual. It is extremely dangerous to yourself and others to attempt to fly this or any paraglider without completing a flying course given by a qualified instructor.

The gliders are carefully manufactured and inspected by the factory. Please use the glider only as described in this manual. Do not make any changes to the glider.

AS WITH ANY SPORT - WITHOUT TAKING THE APPROPRIATE PRECAUTIONS, PARAGLIDING CAN **BE DANGEROUS**.

DISCLAIMER OF LIABILITY

Taking into consideration the risk inherent in paragliding, it must be expressly understood that the Manufacturer and seller do not assume any responsibility for accidents, losses, direct or indirect damage following the use or misuse of this product.

APCO AVIATION [LTD. is](http://www.apco-aviation.com) engaged in the manufacture and sale of hanggliding, paragliding, motorized hang gliding and ultralight equipment. This equipment should be used under proper conditions after proper instruction from an experienced instructor. APCO AVIATION LTD. has no control over the use of this equipment and persons using this equipment assume all risks of damage or injury.

APCO AVIATION LTD. disclaims any liability or responsibility for injuries or damages resulting from the use of this equipment.

The glider is designed to perform in the frame of the Performance Class requirements as set by AFNOR / ACPULS.

Type of glider:

Production No.:

Production Date:

Colours:

Dealer name:

Date of sale:

Date of inspection:

Type of inspection: Inflated, Floor check, Test flown

Inspected by:

2. CONSTRUCTION

The Futura is constructed from a top and bottom surface which are connected by ribs.

One top and bottom panel, together with the connecting rib is called a cell.

Secondary ribs are of a diagonal design and sewn between the main ribs.

Each cell has an opening on the front lower part. The cells fill with air under pressure forcing the panels to take the shape dictated by the airfoil section of the ribs.

On either side, the Futura has a stabilizer which provides some straight line stability and produces an outwards force to help keep the canopy rigid.

The front part of the ribs are made from mylar to keep the leading edge in the correct shape at high speeds and in turbulent air it also improves the takeoff characteristics of the glider.

The fine hook up points are made of Dyneema and embedded in the sail for low drag.

3. MATERIALS

The glider is made from high tear resistant Ripstop Nylon cloth, which is P.U. coated to zero porosity and siliconized to make the fabric greatly resistant to the elements.

The cloth for the top, bottom panels and ribs are of different types due to their different functions.

The fines are made of Superaramid covered with a polyester sheath for protection against wear and abrasion and the bottom section of the brake lines are made of Polyester because of its better mechanical properties to resist bending around the steel ring of the brake fine guide.

The carabiners that attach the fines to the v-fines are made of high corrosion resistant stainless steel.

4. FIRST CHECK AND PREFLIGHT INSPECTION

With a new glider, the following points should be checked:

- the connection points between the harness and glider.

- that there are no twisted fines.

- brake (steering fine) adjustment. The way the fine should be adjusted is to have not less than 10 cm of movement before activation of the brake when the paraglider is inflated above your head. It should not be adjusted so that it starts to pull the trailing edge down when in a state of hands off.

On the Futura an additional brake fine is installed to activate the stabilizer for improved handling. The 27 does not have this feature as the lower aspect-ratio allows quicker handling. The stabilo brake works on a 3:1 slider to give less input on the stabilizer than on the brake fine. The 28, 30 and 32 all activate at different brake settings to insure the right response on all the sizes. The correct point to knot the stabilo brake and normal brake is 200 mm from the line ends. It is important to shorten the stabilo brake by the same amount as your normal brake fine if you make any changes from the factory settings. The glider was certified with this setting and changing them could change the behavior of your glider significantly.

The glider must be checked regularly. In order not to overlook anything, we always recommend checking in a systematic manner following the same procedure from bottom to top.

These are the points to look for

- a. Damage to fines, webbing and thread on the stitching of the harness and the v-fines. The pulleys of the speed system are free to rotate and are not twisted.

- b. The condition of the brake lines, stainless steel ring and security of the knot attaching the brake handle to the brake line.

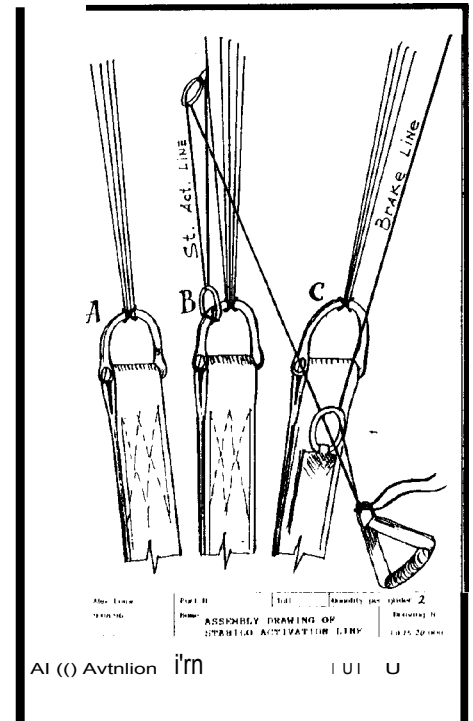
- c. That the stainless steel carabiners are not damaged and fully closed and covered by clear shrink to prevent the bolt of the carabiner from self opening.

- d. The sewing and condition of the fines and connection of the fines.

- e. Damage to the hook up points on the glider.

- f. Internal damage to the ribs.

- g. Damage to the panel material and stitch fines on the panels.



5. UNE MAINTENANCE

Four groups of fines are connected by the v-fines to the harness on each side, A,B,C and the brake fines, which are also called "steering fines" or "control fines".

Superaramid fines are known to be sensitive to the influence of the elements. They must be carefully inspected periodically. The pilot in their own interest must observe the following points to ensure maximum performance and safety from the glider.

- Avoid sharp bending and squeezing of the fines.
- Do not step on the fines.
- Take care of your fines in crowded take off areas.
- Do not pull on the lines if they get caught on rocks or vegetation.
- Avoid getting the fines wet. Dry as soon as possible at room temperature.

1. It is mandatory to change the bottom fines on every paraglider once a year or every 100 hours of flight, whichever comes first. The rest of the fines must be checked yearly and replaced if necessary.

2. Every six months one A or B bottom line must be tested for minimum 50% of the rated strength. if the fine fails - all the corresponding lines must be replaced.

3. Towing, schooling and tandem flights: Our paragliders are manufactured for recreational flying. Professional use of gliders, towing, schooling and tandem flying requires more frequent fine inspection and replacement of A B fines with heavier fines.

6. TRIMMING

The Futura has fixed v-fines which combine the best glide angle and best launch behavior, equipped with accelerator foot stirrup.

Trimming of the brake fine on a new glider: Before the first flight, steering (control) fines should be checked for correct length and trimmed if necessary. A secure knot should join the brake line to the brake handle. See chapter 4 for brake fine adjustment. **It is important to shorten the secondary stabilizer brake fine by the same amount as you shorten the brake fine to maintain the same handling.**

7. HARNESS

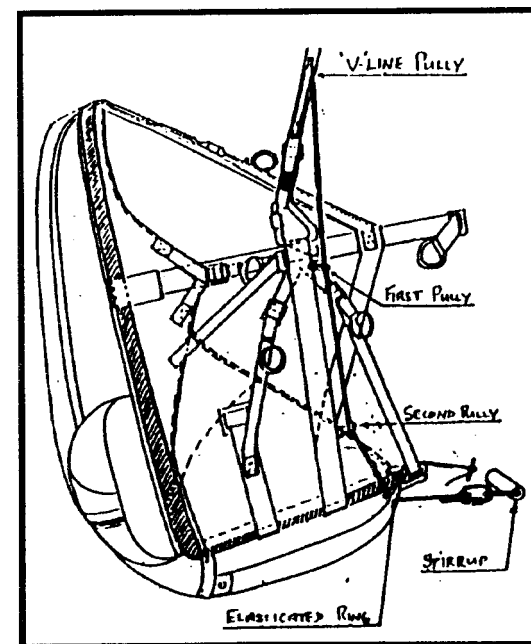
There are several types of harnesses. Only a harness of standard design or with certification should be used. We recommend one of our harnesses which have been developed to obtain the optimum performance from our range of paragliders.

The Futura speed system can be used with a certified harness if it is equipped with two or four pulleys. The two upper pulleys should be close to the hook-up point of the harness (see fig 1). The two lower pulleys should be placed near the front of the seat board. The length of the main ropes must be individually adjusted to the type of harness and the pilots legs. Caution must always be taken that the speed system cannot be activated in normal flight (for example by adjusting the main ropes too tightly).

The aluminium stirrup should be assembled in a way that it is as close as possible to the seat board of the harness when it is not activated. This will ensure that the full range of the accelerator system can be employed, achieving maximum speed from the glider. When the accelerator is fully stretched, the v-line should be pulled down all the way until the top and bottom pulleys in the v-line meet. A two step ladder type stirrup should be fitted if the pilot has difficulty in using the standard type.

The glider is certified with APCO harness of ABS type (Top Harness, Top Secura and Contour).

The distance between the carabiners on the harness is 40 cm.

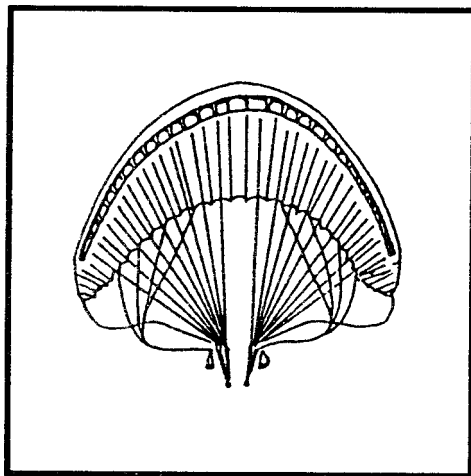
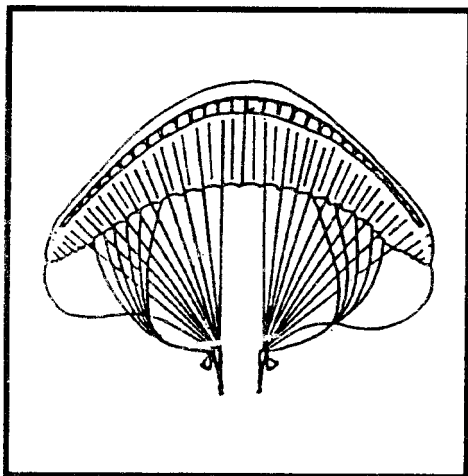


8. SPREADING

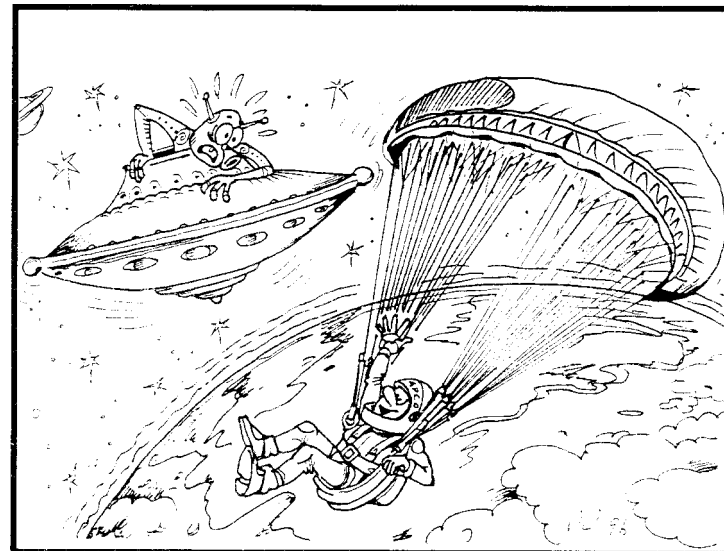
To check the glider before every flight.

- a. Spread the glider on the ground. The air openings should point to the uphill side. Place the harness downhill lined up with the center of the glider.
- b. Spread the lines. Divide the lines into eight groups. A,B,C,D and brake lines: left and right. Place the rear lines at the back of the glider. Place the front lines on the center and rear lines.
Place the brake lines in a curve, separated from the other lines.
 - Do not twist the harness and lines around each other.
 - Take care that the lines do not lie under the glider.
- c. Place the rear sides of the glider partially together. The glider should appear horse-shoe shaped. This method of radius-like spreading of the canopy ensures equal tension to the front lines and enables easier lifting. In strong winds, push the glider closer together, see fig. 2 and 3.

The most common reason for a poor start is a badly spread glider.



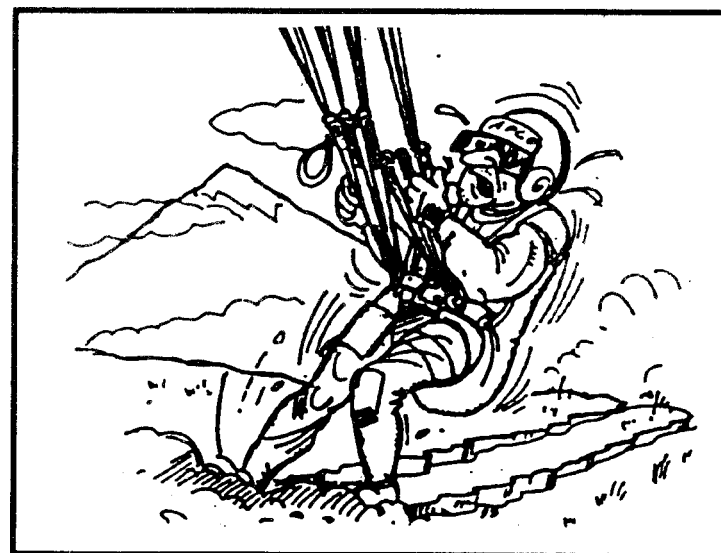
9. TAKE-OFF. REVERS LAUNCH

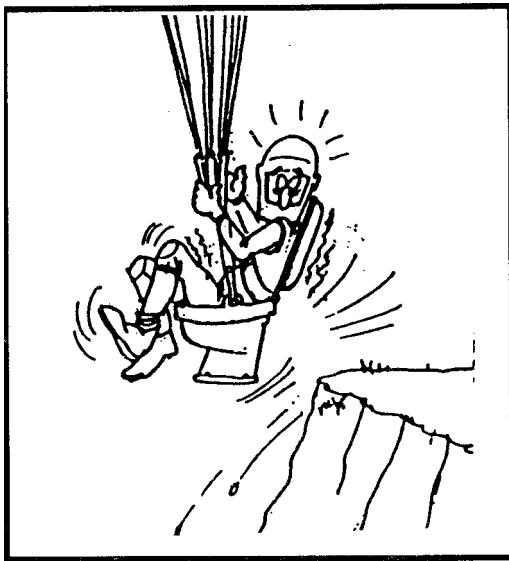


As there are several methods of launching it is advisable to use the method that you feel comfortable with and which was taught to you by your instructor.

ALPINE AND FRONTAL LAUNCH

It is advisable to only use the A risers during this launch so as to get a fast acceleration on the wing to get it above your head.





10. FLIGHT

Flight speed is dependent on the amount of brake the pilot uses and the position of the speed system. At 0% brake: The brake lines without tension - The Futura will fly at a trim speed of 34 km/h with a pilot in the middle of the weight range. At 25% brake : The glider will fly at the minimum sink speed of 30 km/h.

At 80% brake: The glider will fly at the minimum flight speed of 22 km/h.

Beware of flying at such low air speeds. There is no reason to apart from when landing. The sink rate of the glider is excessive and there is a possibility of going into a full stall or deep stall situation. When using excessive brake aiways release the brakes slowly and smoothly until the last 30% to stop any tendency for the canopy to rotate forwards and collapse. Release the last 30% faster to help accelerate the glider to horizontal speed and aiways release the brakes symmetrically so no spin will develop.

In extreme situations the glider can possibly enter into a negative spin. When flying the glider please be aware of such an eventuality. We highly recommend that the pilot receives proper training and explanation of how to handle such situations by joining an advanced training course.

Thermal flying: In a narrow lift " band " it is important to fly slowly and make as short a turn as possible. To reduce speed and to obtain an optimum sink rate, the brakes should be pulled about 30%. Using this method of flying the pilot can make very short, flat turns by releasing the outside brake while at the came time, pulling on the inside one.

Soaring: The lift in front of a hill or mountain, when there is wind, is usually quite strong. The pilot can fly more dynamically and faster.

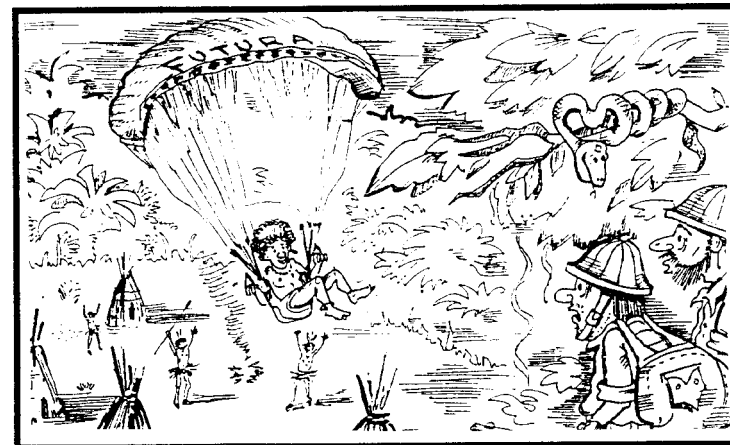
High wind flying: Do not launch in winds stronger than 30 km/h and take more tare in strong gusty conditions. In extreme weather conditions or by flying

too slowly the glider can possibly enter into an unstable sinking flight, known as deep stall. This can be recognized by almost vertical descent and very low air speed. The glider will recover automatically. To recover quickly from such a stall, the pilot must brake sharply on both sides to make the glider surge over the pilot's head. It is important to accelerate the glider forwards. A more effective method of obtaining normal flight would be to pull the A risers down by 4 to 5 cm, but tare must be taken net to induce a front collapse. Pushing the accelerator will also give the same results.

Asymmetric collapse: When one ride of the glider partially folds together it is important to maintain direction by using the brake on the opposite side immediately and then pump the folded side free. With a large collapse of more than 50% it is important to react very quickly but be careful net to pull the brake too much as this could cause a spin to the uncollapsed side. If the tip folds and stays inside the tip lines it is possible to take hold of the stabilizer line and pull the tip out of collapse using one line and then recover in the normal way. The glider has a strong tendency to reopen after a collapse. If no input is given after a 55% collapse the glider will dive and turn 90 to 180 degrees before opening on its own. If the stabilizer reinflates first, the collapsed wing will generally reopen fast with a lot of energy which could collapse the tip on the opposite side, but it will reinflate immediately. If the pilot gaves input after a collapse and stops the dive and rotation the reinflation is generally very soft and gentle.

Front stall or Front collapse: If the glider suffers a frontal collapse the glider will automatically reinflate after 1 to 3 seconds. The reinflation could be speeded up by the pilot pulling both brakes down 70% and releasing them as soon as the glider is reinflated.

There is a possibility that the glider could enter a deepstall after such a deflation, if the glider does not start flying within 2 to 3 seconds the pilot could pull both brakes sharply, speed up the wing by pushing the accelerator or pull the A riser down gently (net more than 4 cm) to get the wing flying normally again.

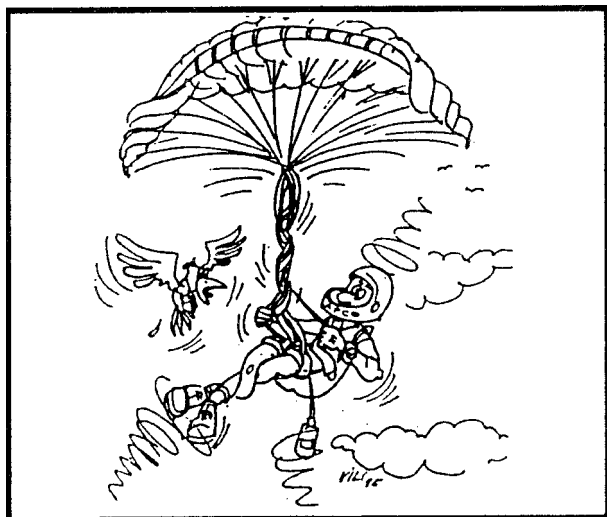


"B" Stall: To lose height quickly so as to avoid bad weather or land in a restricted area the Futura can be "B" stalled by gripping the "B" riser at the attachment shackle of the "B" unes. Pull down slowly for the first 10 cm. There will be strong resistance at first. The canopy chape will distort and fall a little behind the pilot's head. Pulling a further 8 cm will stabilize the glider above the pilot's head. Pull down equally or a turn may develop. Vertical descent rates of 10 meters per second can be safely achieved. To recover release both v-unes slowly at first and fast for the last 10 cm to accelerate the glider to flying speed.

Big Ears: Height can also be lost in a controlled way by collapsing both tips. To do this take no more than the last one "A" line from the tips and pull 10 cm down sharply. This will collapse 20% of the wing at each tip. This can give sink rates of up to 5 meters per second. In certain circumstances the tips will remain in without holding the "A" unes. Steering control can be maintained by weight shifting with the harness. To recover, let go of the "A" unes and pull the brakes down 50 % on both the collapsed sides until the wing is fully inflated.

Do not do any extreme maneuvers with the tips collapsed as this puts an excessive load on the tentor unes which may lead to failure of old or damaged unes.

Spiral Dives: By progressively applying the brake on one side, the glider can be put into a spiral dive. Safe, high sink rates can be achieved if done with care. High speeds and excessive loads result from strong spiral dives caused by using too much brake. Recovery must be done by slowly releasing the brake, otherwise strong forward to rear surges will result in the canopy losing air pressure and large collapses occurring. Take care that you have enough height to safely exit the spiral. The Futura will need 1 to 2 turns to exit neatly from very deep spirals.



11. LANDING

Before landing, the pilot should check the wind direction, which can be seen by smoke, flags etc., or the speed of the glider in comparison to the ground. At a height of forty to seventy meters the final part of the flight must begin. The pilot should head straight into wind towards the landing field by gently braking or by making s-turns the exact point can be chosen.

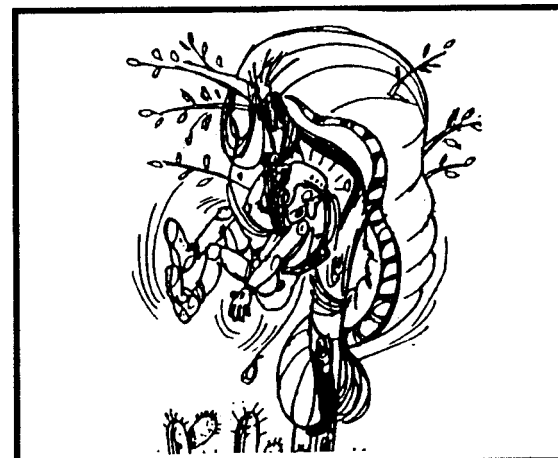
At a final height of twenty meters, descent should, preferably be made at trim speed. At a height of one to two meters the landing should be achieved by using full brake.

Steering not functioning. If the pilot cannot reach the steering unes for any reason or if they are not functioning properly, (for example: if they are broken after damage), use the alternative method of steering by pulling the rear v-line. Steering in this way is much slower than normal. Care should be taken when landing this way to avoid stalling too high.

Strong turbulence. Continue flying by pulling the brakes down 20% in order to increase the air pressure inside the canopy.

Tree landings: If it is not possible to land in an open clearing, steer towards the highest tree and sink down towards it, protecting your face with your hands, elbows pressed to the body. Secure yourself to the tree with the unes if descent from the tree involves danger, wait for assistance. After a tree landing, all the unes must be remeasured and the canopy checked.

Water landings: As you approach landing, release all the buckles of the harness except one leg. Just before hitting the water, release the remaining leg buckle and continue braking. Swim away from the harness and glider to avoid entanglement. On impact, if the glider is allowed to rotate completely forwards until it hits the water with the front openings, the air inside will then be trapped, making the canopy into a big floating balloon which will give the pilot more time to escape and make for a better recovery of the canopy which will not be so full of water.



12. PACKING

Spread the canopy completely out on the ground. Separate the fins to left and right sides of the glider. If the v-fins are removed from the harness, join the two v-fins together by passing one carabiner loop through the other. This keeps them neatly together and helps to stop fine tangles.

Fold the canopy alternately from the right and left sides, working towards the middle, press out the air, working from the rear towards the front. Place the v-fins at the trailing edge of the folded canopy and use them to finally roll up the canopy.

13. MAINTENANCE

Cleaning: Cleaning should be carried out with water and if necessary, soft soap. If the glider comes into contact with salt water, clean thoroughly with fresh water. Do not use solvents of any kind, as this may remove the protective coatings.

Storage: The glider should be stored in a cool, dry place. A wet glider should first be dried, preferably in a dark place. Protect the glider against sunlight (UV radiation). When on the hill keep it covered or in a bag. Never store the glider near paint, petrol or other chemicals.

Damage: Tears in the Bail (up to 5 cm) can be repaired by using spinnaker repair tape (for non siliconized cloth). Greater damage should be repaired by a professional repairer.



14 GENERAL ADVICE

The glider should be checked every year by a qualified person or agent of the company.

The glider is carefully manufactured and checked by the factory. **Never** make changes to the canopy or the lines. Changes can introduce dangerous flying characteristics and will not improve flying performance.

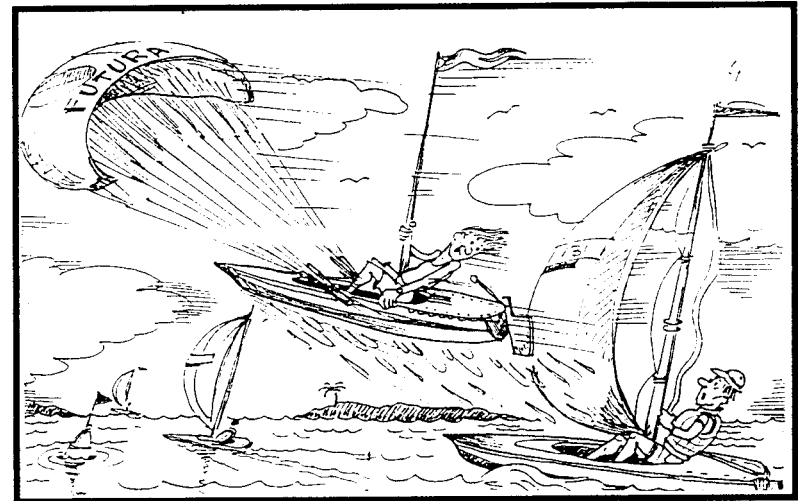
Do not put the glider in direct sunlight when not necessary. In order to protect the glider during transportation or waiting time we recommend one of our lightweight storage bags.

If you have any doubts about flying conditions - do not begin.

If you have any questions, please contact us or your dealer.

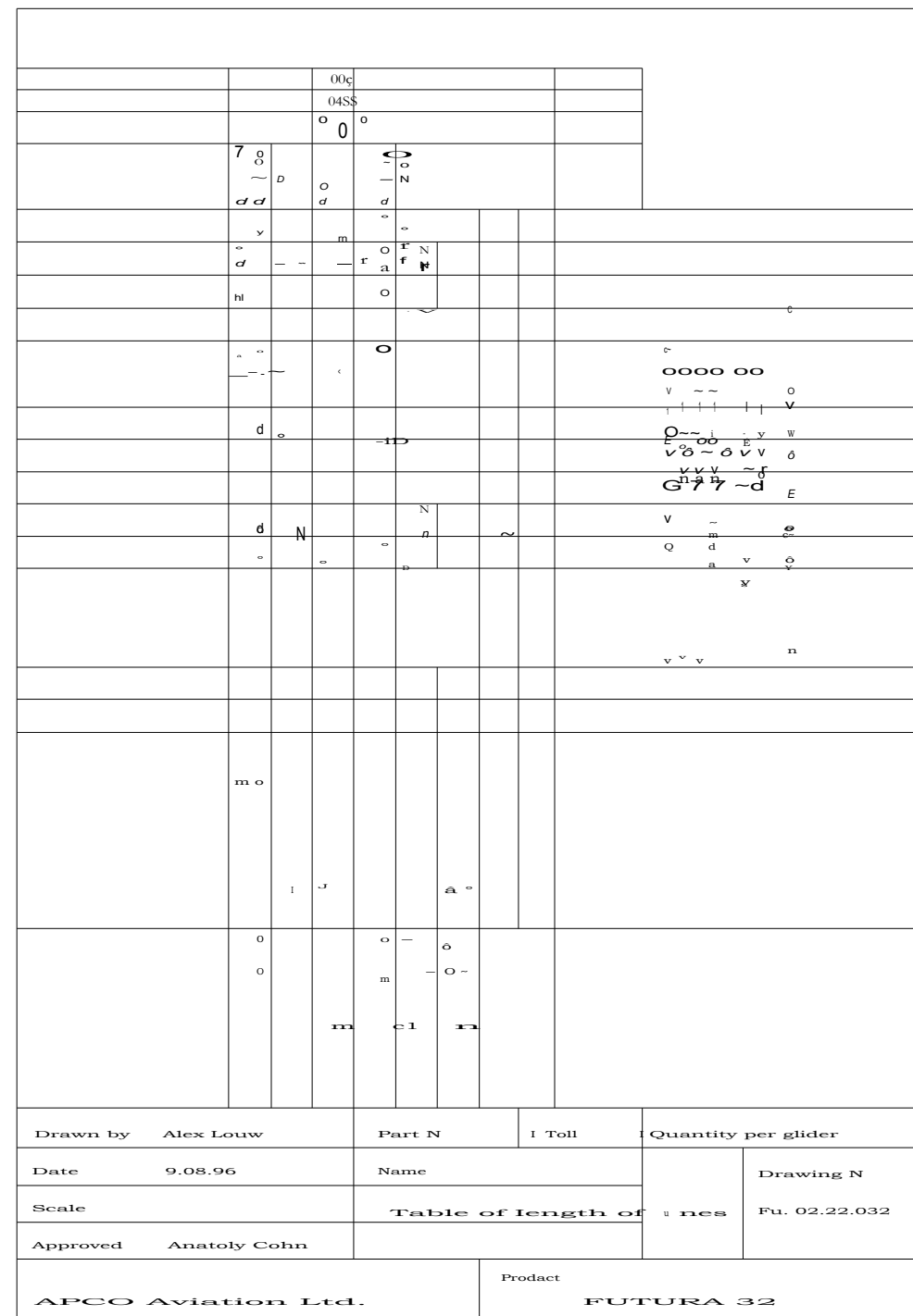
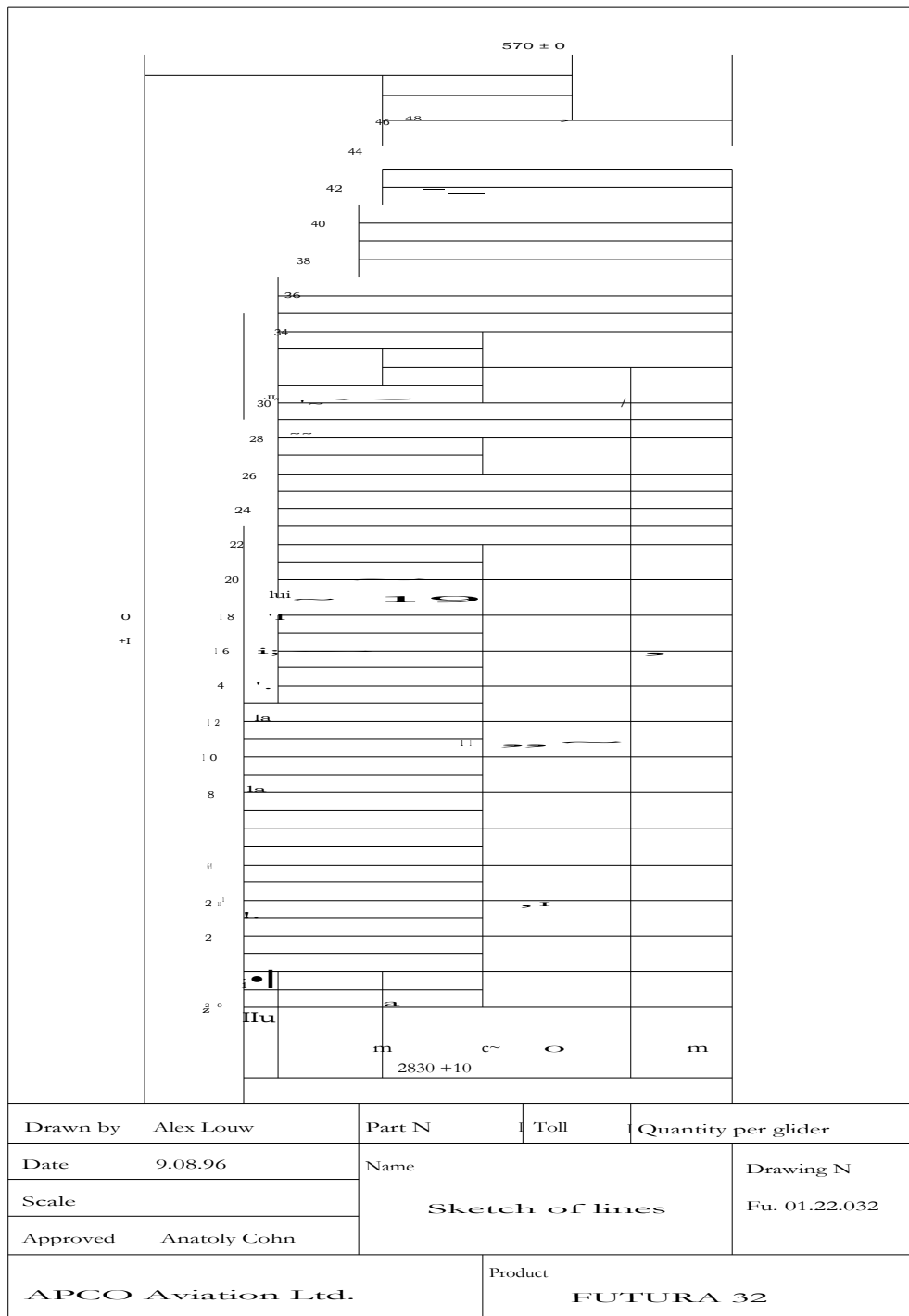
Lastly, be equipped with a **CERTIFIED EMERGENCY PARACHUTE** on every flight.

APCO wishes you many hours of enjoyable flying.



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Scale						
Approved Anatoly Cohn						
APCO Aviation Ltd.			Product FUTURA 27			

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AFRO - TESTS	catégorielcategory	PERFORMANCE
	No de conformite aux normes Reference number standards S52308 1552309	96101742 AP
	date d'enregistrement date certified	16110196
CONSTRUCTEUR MANUFACTURER	APCO AVIATION LTD	
MODELE	FUTURA	27

Configuration lors des tests Configuration during the tests			
Poids total volant mini Minimum flying weight	65	Kg	Type de harnais Type of harness SE MISTA gLE
Poids total volant maxi Maximum flying weight	80	Kg	Constructeur Manufacturer APCO AVIATION
Poids du modèle Weight of the mode)	7	Kg	Modèle Model CONTOUR
No d'élèveur No of risers	3		Réglage de la ventrale Chest strap adjust (Cm) 45
			Hauteur assise 1 maillon Seat 1 maillons distance (Cm) 50

Accessoires / Accessories		
Débattement de l'accélérateur Range of speed bar	15	Cm
Débattement des afficheurs Range of trimmers	sans afficheurs/ N trimmers	cm
Plage de vitesse aux commandes Brakes speed range	11	K m/ h
Plage de vitesse avec accessoires Range with accessories	20	Km/h
Révisi Check every	!Ooh i Annueise _ 100 Fting H I yea	—
Attention avant utilisation lire 7e manuel de vol Warning: before use refer to the users manuel		

Tests de conformite realises par l Conformity tests carried out by

AERO - TESTS

6 chemin de camperousse 06130 - GRASSE - FRANCE

AERO - TESTS	catégorielcategory	PERFORMANCE
	No de conformite aux normes Reference number standards S52308 / S52309	96121745 AP
	date d'enregistrement date certified	04112196
CONSTRUCTEUR MANUFACTURER	APCO AVIATION LTD	
M O D E L E	FUTURA	28

Configuration lors des tests configuration during tests			
Poids total volant mini Minimum flying weight	75	Kg	Type de harnais Type of harness SEMI STABLE
Poids total volant maxi Maximum flying weight	90	Kg	Constructeur Manufacturer APCO AVIATION
Poids du modèle Weight of the mode)	7	Kg	Modèle Model CONTOUR
No d'élèveur No. of risers	3		Réglage de la ventrale Chest strap adjust (Cm) 45
			Hauteur assise 1 maillon seat 1 maillons distance (Cm) 50

Accessoires / Accessories		
Débattement de l'accélérateur Range of speed bar	15	Cm
Débattement des afficheurs Range of trimmers	sans afficheurs/ N trimmers	Cm
Plage de vitesse aux commandes Brakes speed range	14	Km/h
Plage de vitesse avec accessoires Range with accessories	24	Km/h
Révision Check every	annuelle/100 de vol - Yearly 100 flying hours	

Attention: avant utilisation, lire le manuel de vol.

Warning Before use refer to the user's manual.

Tests de conformité realises par 1 Conformity tests carried out by

AERO - TESTS

6 Chemin de Camperousse 06130 -GRASSE -FRANCE

AERO - TESTS	catégorielcategory	PERFORMANCE
	No de conformite aux normes Reference number standards S52308 1 S52309	96101743 AP
	date d'enregistrement date certified	16110196
CONSTRUCTEUR MANUFACTURER	APCO AVIATION LTD	
MODELE	FUTURA	30

Configuration lors des tests 1 Configuration during the tests

Poids total volant mine Minimum flying weight	85	Kg	Type de harnais Type of harness	SEMI STABLE
Poids total volant maxi Maximum flying weight	105	Kg	Constructeur Manufacturer	APCO AVIATION
Poids du modèle Weight of the mode)	7,50	Kg	Modele Model	CONTOUR
No, d'élèveateur No. of risers	3		Réglage de la ventrale Chest strap adjust	(Cm) 46
			Hauteur assise 1 maillon Seat 1 mailloins distance	(Cm) 50

Accessoires / Accessories

Débattement de l'accélérateur Range of speed bar	15	Cm
Débattement des afficheurs Range of trimmers	sans afficheurs/ No trimmers	Cm
Plage de vitesse aux commandes Brakes speed range	13	Kmlh
Plage de vitesse avec accessoires Range with accessories	24	Kmltt
Révision Check every	100h 1 Annuelle - 100 Flying H 1 year	
Attention: avant utilisation lire le manuel de vol Warning: before use refer to the users manual		

Tests de conformite realises par I Conformity tests carried out by

AERO - TESTS

6 chemin de camperousse 06130 - GRASSE -FRANCE

PROCES VERBAL DE TEST EN VOL

MARQUE	APCO	DATE	/139/96
MODELE	FUTURA 27		
TYPE SELLETTE	CONTOUR ABS		
REGLAGE VENTRALE	41 cm		
POIDS TOTAL EN VOL	77 6g		
PILOTE	ti/OMLb 1 1'1' LUN		
JURY	HAL:RON 1-, Rode; A, !AWN A, EXILA Li		
CATEGORIE	FORM11Nt F		

DECOLLAGE	L' silo écope bien sans point dur, légère tendance à épaisser en arrivant au dessus de la tête
ATTERRISSAGE	lion arrondi
UTILISATION	Accélérateur V min. 23/24; V max. 34/35; V ace. 44/45
ACCESSOIRES	
STABILITE TANGAGE	L'aile décroche (les bout d'aile puis du centre, reprends le vol avec une abat ee relativement amortie
RECHERCHE PARACHUTALE	L'aile reprend soir voll avec une tendance à glisser
COMMANDES	srr l'axe de lacet ett un léger mouvement de tangage
RECHERCHE PARACHUTALE	L'aile e tendance à r,-nier en parachutale, puis
AUX «B»LENT	Pet)ni au vol spon ané par un nouvement de tangage
RECHERCHE PARACHUTALE	L'aile reviens en vol avec une légère abattée et une
AUX «B» RAPIDE	lèjè e glissade sur l'axe de lacet
APTITUDE A TOURNER	Effectué dans les temps, roulis inverse assez peu
360 °	nia que, borne maniabilité.
MANOEUVRABILITE	L'aile abat franclienient en sortie de virage mais
	reste bien homogène.
WING OVER	Commande progre.ssiverner.t physique avec débattement
	moyen.
FERMETURE ASYMÉTRIQUE	L'aile effectue !a de torr en rouvr n d'un bloc
FERMETURE ASYMETRIQUE	Réouverture rapide avec une bonne ressource et une
MAINTENUE	légère perte de pression à l'extérieur sans
	conséquences.
VRILLE	Ressors avec une abattée assez bien amortie, arrêt de
	la rotation en bi de tour
DECROCHAGE ASYMETRIQUE	L'aile reste homogène avec un mouvement de tangage
	bief amorti.
FERMETURE SYMETRIQUE	L'aile rouvre du centre puis progressivement des
	bouts d'aile
360 ° ENGAGES	' aile effectue un 360 ° avant de revenir sur axe avec
	une bonne ressource.

PROCES VERBAL DE TEST EN VOL

MARQUE	APCO	DATE	02/09/96
MODELE	Ii'UTURA 28		
TYPE SELLETTE	APCO Contour ABS		
REGLAGE VENTRALE	45 cm		
POIDS TOTAL EN VOL	87 kg		
PILOTE	Didier EXIGA		
JURY	RO,t Andre, DAERON Pie; e, I3EAUVALI ET Xavier		
CATEGORI E	F H R 1' O RMAN C I;		

DECOLLAGE	Bon gonflage, la voile arrive assez rapidement au dessus de la tête_.
ATTERRISSAGE	P. i\ s
UTILISATION	V min. 24 km/h V bras hauts; 38 km/h
ACCESSOIRES	V accélérée; 48 km/h
STABILITE TANGAGE	voile sort franchement avec un mouvement d'abattée
RECHERCHE PARACHUTALE	Sortie progressive avec petit mouvement de tangage
COMMANDES	
RECHERCHE PARACHUTALE	'ortie très progressive avec légère glissade latérale
UX «B»LENT	
RECHERCHE PARACHUTALE	Sortie tranche avec mouvement de tangage un peu
AUX «B» RAPIDE	marqué
APTITUDE A TOURNER	La voile tourne assez rapidement au début de la
360 °	rotation puis accélère avec l'augmentation du roulis,
MANOEUVRABILITE	Pas de tendance importante au départ en négatif,
	sortie avec mouvement de tangage un peu marqué
WING OVER	La voile est facile à cadencer. Bon comportement des
	bouts d'aile
FERMETURE ASYMETRIQUE	La voile se rouvre assez rapidement et revient sur
	ax avec environ 180' de rotation
FERMETURE ASYMETRIQUE	La voile se rouvre progressivement dans le troisième
MAINTENUE	jour, intervention et retour sur axe dans les 90 °
VRILLE	La voile sort en rotation avec une abattée
	asymétrique peu importante et revient sur axe après
	environ 180'
DECROCHAGE ASYMETRIQUE	La voile sort avec un petit mouvement de tangage
FERMETURE SYMETRIQUE	La voile se rouvre progressivement par une
	réalimentation par les bouts d'aile
360 ° ENGAGES	La voile sort assez progressivement de la rotation
	mais n'a pas de tendance à la neutralité spirale

PROCES VERBAL DE TEST EN VOL

MARQUE	111'(0	DATE	1213/8/96
MODELÉ	H'U'1'UITA 30		
TYPE SELLETTE	CONSIRU('L'F,IIR		
GLAGE VENTRALE	4S cm		
POIDS TOTAL EN VOL	9', I<t ;		
PILOTE	l'T?III [I:R V i nceril.		
JURY	liAIC UN i', itor,i: A, l'AIJN A, IX LGA D		
cAPrcoRLE	P1111()R141VNCI		

DE COLLAGE	horu.' de voile I rr nu iii nositarit un freinage pour marquer la phase de l ; nq o linalion A.ane g grand debatt'in~ul gury commandes l'A in.: 22; bras haut_: 3'.; a<'-él.érée: 46. l'ma; l'al/atLes qui. smii. L'aile se comprime dans l' ' nv' 1.Inrn alr nivv'au cL: cai-ssons centraux l nr: longr, de '?; Cf4. voile franchement passant du parachutage au apidement. Reprise du voll spontanément vi'l' t: I'li. rldsrtcnt sans effort le retour en 'ic,II rivr'urent mm, l. t' ' ~"lyunuvr. mise en vol Ftnm , nri pa du ta iu ttr:.' VIII, r lit ' r Llu., J W ll, t' t
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PROCES VERBAL DE TEST EN VOL

MODE LE	FUTUKA 3?.	DATE	28/8/96
TYPE SELLETTE	WNS; RU fEl11 CUN'I)UR -'		
REGLAGE VENTRALE	n 'Ch		
POIDS TOTAI, EN VOL.	11 U li , ,		
PILOTE	T'GULI1.ls Vtlncur.		
JURY	L AGIU7N L', (u) t. A, ~J11^N A, FAX I GA D		
CAL'E GOR M	L1: R F Cl. ITAN C' L,		

IIECOi.1.AGE	rA?nLe de vo il r frit,, un freinage marque; Gare nlct; sattr' afin d,, .O ab,l.tser son aile avant la mise en vol
AT'TEUIISBAUE	3-T' vée -
U'TILISATION	brai; haut: accélérée: 49.
ACCESSOIRES	
O'IAHILTW, TANGAGE	Dans l'al,attMe l'aile sn comprime clans l'envergure et atnnrce un' -t eu t rr
RECHERCHE l'ARACHUTALE	F,n amorce du Parachutage l'aile se vide tranchement dé,-corner, reprise du vol spontanément
RECHERCHE PARACHUTALF: AUX eR»LENT	l. 'aile* se vide sans ,e[fulT puis se déforme dans l'envergure, prise du-vol sens Intervention
RECHERCHE PAFUICHUI'ALE AUX «In»- RAPIDE	Mém,, phénomènc mats r,*Prise (lu vol plus progressive
APTITUDE A TOURNER 360'	lianrabL', ac'c~lénation t-t virage proyressive
MANOEUVRADI LITE	Pas d, - sort i e du donm i nc de vol
RING OVER	Reste homoy~nc'__f cils a .:ndencer
FERME'tURE ASYME'TRIQUE	[louvrttirr franche rte générant pas d'autre fermeture une sttBpeutc haute .i '-t arrachée de son point d'ancrage
FERME'TUF1E ASYMETRIQrJE	Trds forte tr'ndanr_'e à la rouverture par le travail dis
MAINTENUE	stabrlu, tofnCin,, rap)de,
VRILLE	Abat.Lée peu ma,tp,'e, anu,cce da Ceuneture. petit rreque de cravate qui sortdne toute teste pplotable
DECROCHAGE ASYf4ETRIQUE	Abattée P?u nntquée retour au vol apontar,ément
FERMETURE SYMETRIQUE	ilouverture f?ar ls cent.rc puis les bouté d'aile avec un peu d'ab rn~ écrie
360 " ENGAGES "	Accélération importante mais progressive, retour au vol spontanément

AFRO T'Eti'T'S 6 ch (le CautperoueRO 06130 CRASSE le Plan

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Established in 1974, APCO Aviation designs, manufactures and markets original products in the fields of Paragliding, Hang Gliding and Ultralight Aircraft, including Emergency Systems and a wide range of accessories. APCO'S products are marketed in 40 countries worldwide and is at the cutting edge of sport aviation technology.

APCOS Paragliders hold the following FAI Certified World Records.

Worlds' longest Cross Country Flight (Open Distance Record) - Alex Louw.

Worlds' longest Flight (to a Declared Goal) - Chris Muller

Worlds' Record Height Gain - Sean Dougherty

World 25 km Triangle Record - Speed Run - Eric Oddy

World Record Distance to a Turning Point - Willi Muller

World Record to Goal - Alex Louw

viaAtkⁿ Lt

Setting Future Standards

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