Working at Height

Working at height is inherently dangerous. Around 40 people die and 6,000 – 7,000 people are injured each year from falls. Choosing the correct equipment will only make you safer, but not safe. The first thing to consider is whether it is necessary to work at height at all. If it is essential, then the next line of defence is to prevent the possibility of a fall by the use of handrails and work positioning harnesses and lanyards. Should a fall still be possible then fall arrest harnesses and lanyards should be worn. The overhead worker should be trained in the use of this equipment. IRATA is a highly respected training authority and they can provide training guidance. The Health and Safety Executive website www.hse.gov.uk has up-to-date advice. They will email you with changes to regulations and recommendations as they occur [www.hse.gov.uk/news/subscribe/index.htm]. Finally, but of vital importance, consideration must be given to the rapid rescue of personnel who have fallen.

The Importance of Rapid Rescue – Suspension "Trauma" [Syncope]

Swift rescue of personnel who are suspended by a harness and lifeline is of vital importance. If the casualty is suspended, blood will pool in the legs. Leg veins are capable of expanding to take up to 60% of the total blood volume. The reduced venous return results in decreased cardiac output and the casualty will become sweaty, dizzy, nauseous and will faint. Depending on whether their lanyard is attached to the rear or front of the harness, the unconscious casualty's head will be canted backwards or forwards and their tongue will fall to block the airway. Even uninjured volunteers felt dizzy in as little as three minutes, typically 5 to 20 minutes. Loss of consciousness occurred in as little as five minutes, typically 5 to 30 minutes. Such rapid rescue times could not necessarily be achieved by the rescue services so it is crucial that a plan is carefully thought through on how to rescue suspended personnel using trained on-site staff. The Temporary Work at Height Directive states that workers must have on-site rescue equipment and training. See the Jag Rescue System on page 213.

Notes on First Aid to a Suspension Casualty

Information on the correct procedure to adopt after recovering a suspension casualty is variable and somewhat confusing. David Halliwell, Head of Education of the South West Ambulance service says [2007] it is critical that the casualty is never laid flat, not even in the recovery position and that they should be kept sitting upright for 30 minutes. He says that if they are allowed to lay flat, the volume of blood that has pooled in their legs will return to the heart and could cause instant cardiac arrest. However, this opinion is disputed by Dr Anil Adisesh whose research [2008] has been unable to find firm evidence concerning the problems associated with laying the casualty flat and his advice is to use the standard first aid recovery position. It is important that any person who becomes unconscious while suspended, whether appearing recovered or not, is given full medical supervision [Dial 999] as problems can also occur some days after the rescue due to renal failure.

Reducing the Risks

It may be possible to reduce the chance of venous pooling in a conscious suspended casualty by encouraging them to wiggle their toes or raise their legs, this will help to pump blood out of the legs and to the heart. The information above has been taken from talks on the subject by David Halliwell, Head of Education of the South Western Ambulance Service and by Dr Anil Adisesh [Health and Safety Laboratory]. Further information can be found in "Harness Suspension: Review and Evaluation of Existing Information" by Paul Seddon and obtainable as a free AMF download from the HSE website.

The person purchasing fall arrest equipment, which consists of a harness, lanyard and anchor, should be competent to do so.

HARNESSES

FALL ARREST

NEW TYPE

PPE

Petzl Newton EASYFIT

[International Version] Rapid intervention fall arrest harness suitable for non-suspended use at height. Conformity: CE EN 361, EAC, ANSI Z359.11, CSA Z259.10, UKCA Weight: Size 0 - 1655g Size 1 - 1715 g, Size 2 - 1765 g.

- ✔ Shoulder straps equipped with self locking DoubleBack buckles
- ✔ Rapid donning thanks to EASYFIT vest.
- ✔ Sternal and Dorsal attachment points with fall arrest indicators.
- ✔ Quick-attach FAST automatic buckles [Sternal and leg loops] allow the harness to be put on easily with both feet on the ground
- ✔ Stowage system for MGO connectors [page 180] on fall arrest lanyards, one each shoulder strap. In case of a fall the system releases the MGO connectors and allows the absorber to be deployed.
- ✔ Equipment loops and slots.
- ✔ Now fitted with 2 convenient zippered pockets!

Newton Easyfit	size	thigh	waist	height	colour	code	price
	0	440 - 590 mm	650 - 800 mm	1.60 - 1.80 m	B/Y	PETC073FA00	£160.00
	1	470 - 620 mm	700 - 930 mm	1.65 - 1.85 m	B/Y	PETC073FA01	£160.00
	2	500 - 650 mm	830 - 1,200 mm	1.75 - 2.00 m	B/Y	PETC073FA02	£160.00

ECONOMY FALL ARREST

£✔

PPE

Multipurpose Harness HT22

Designed for applications which require a front anchorage point but they are also fitted with a rear anchorage. Leg and chest adjustment. Not suitable for suspended use. Conformity: CE EN 361. Fits up to 1,220 mm waist [48"].

Harness HT22	weight	code	price
	1,000 g	SAFHT22	£58.99

WORK POSITIONING - CONVERTS TO FALL ARREST

PPE

FAST buckle

AVAO® SIT FAST Harness

New version of this popular harness. Features a wide semi-rigid waistbelt, and leg loops which give excellent support. Lightweight breathable construction maximises air flow providing greater comfort. The FAST buckles allow the user to avoid re-adjustment each time they put on the harness. Self-locking DoubleBack buckles make for quick adjustments to the waist. Multiple tool loops around the waist and rear provide plenty of storage for working at height. CE EN358, EN 813, EAC

Gated ventral attachment

ASTRO® SIT FAST Harness

NEW to Flints this provides the ultimate comfort for rope-access. Featuring a gated ventral attachment point it allows excellent integration of rope clamps, lanyards, seats etc. Lightweight semi-rigid waist and leg loops are contoured and lined with breathable foam padding for ultimate comfort when working whilst suspended. This can be enhanced when combined with the podium. CE EN358, EN 813, EAC

Sit	model	size	weight	code	price
	AVAO® Sit Fast	0	1,115 g	PETC079BA00	£173.00
	AVAO® Sit Fast	1	1,130 g	PETC079BA01	£173.00
	AVAO® Sit Fast	2	1,145 g	PETC079BA02	£173.00
	ASTRO® Sit Fast	0	1,025 g	PETC085AA00	£187.00
	ASTRO® Sit Fast	1	1,040 g	PETC085AA01	£187.00
	ASTRO® Sit Fast	2	1,055 g	PETC085AA02	£187.00

Work positioning equipment has been designed to enable workers to position themselves for work at height. Harnesses must comply to EN 358 [or EN 813 Sit Harnesses]. Work positioning equipment is not intended to arrest a fall. Even a short fall onto a waistbelt can prove fatal due to the pressure on the internal organs. The SIT harnesses listed here can be used alone as work-positioning but can be converted to full fall arrest harnesses by adding the TOP chest harness .

BOSUN'S CHAIR

Shackles to attach directly to ASTRO Sit Harness

Petzl Podium

A wide comfortable bosun's chair to improve comfort when suspended. Can be easily hooked on the back when not in use. The podium can attach directly to the gated ventral attachment point of the ASTRO® Harnesses using the shackles. Fitted with two equipment loops and adjustable straps.

Petzl Podium	weight	code	price
Podium seat	1,060 g	PETS071AA00	£136.00
Shackles for ASTRO®		PETC087AA00	£13.50

Size guide	Thigh	waist	height
Size 0	450 - 650 mm	600 - 900 mm	1.60 - 1.80 m
Size 1	450 - 650 mm	700 - 1100 mm	1.65 - 1.85 m
Size 2	600 - 750 mm	800 - 1300 mm	1.75 - 2 m
TOP [one size]	n/a	n/a	1.60 - 2 m

CHEST HARNESSES

PPE

Easily stow MGOs at the shoulder

TOP Chest Harness

Allows the user to convert either the AVAO® or the ASTRO® sit harnesses from work positioning to fall arrest harnesses. It also allows a more comfortable experience by helping distribute the load to the shoulders. Widely spaced foam shoulder straps reduce neck chafing. Stowage connectors on the shoulders keep connectors like the MGO hooks close to hand, but out of the way. Certified to CE EN 361 (2) EAC

PPE

TOP CROLL S

TOP CROLL Chest Harness

Converts both the AVAO® and the ASTRO® SIT harnesses to allow rope-access. With the same excellent comfort of the standard TOP, this version integrates a CROLL rope clamp to the sternal attachment point. Available with either a small or a large CROLL. The small CROLL has a textile sternal attachment point allowing for optimal weight and bulk reduction. NB. Shoulder stowage connectors not included in this version.
Small: CE EN 361 (2) EN12841 type B EAC
Large: CE EN 361 (3) EN12841 type B EAC

Top	model	colour	weight	code	price
	Top Standard	Black/Yellow	660 g	PETC081AA00	£82.00
	Top Standard	All Black [not shown]	660 g	PETC081AA01	£86.00
	Top Croll Small		515 g	PETC081BA00	£119.50
	Top Croll Large		600 g	PETC081CA00	£119.50

WORK POSITIONING & FALL ARREST

Widely spaced shoulder straps for reduced neck chafing.. Stowage connectors to store MGO Hooks

X-shaped dorsal construction wraps to reduce pressure points during prolonged suspension.

Sternal and dorsal attachment point for connecting a fall arrest system.

Lots of equipment loops with protective sheaths

FAST buckles on leg straps for easy "donning"

Breathable perforated foam for maximum comfort when suspended.

AVAO BOD FAST
AVAO SIT FAST + TOP

PPE

AVAO® BOD FAST

A top quality harness that will cover most basic requirements - fall arrest, work positioning and suspension. The AVAO® BOD is basically just an AVAO® SIT harness supplied with a TOP chest harness. This update to the old version, is that the back connecting strap is fully adjustable making it more comfortable for the user compared to the previous version.

- ✔ Great value
- ✔ Excellent Support
- ✔ Easy to adjust
- ✔ Easy to "don"
- ✔ Good stowage of connectors and tools
- ✔ Fall Arrest
- ✔ Height adjustable
- ✔ Work Positioning
- ✔ Suspension
- ✗ Doesn't have an integrated CROLL for Rope access, but this can easily be added by the user.

Certified to CE EN 361 EN 358 EN 813 EAC

Complete Harness kit	size	weight	code	price
AVAO® BOD FAST	1	2,045 g	PETC071BA01	£262.00
AVAO® BOD FAST	2	2,125 g	PETC071BA02	£262.00

LANYARDS

WORK POSITIONING & FALL ARREST - ROPE ACCESS

ASTRO BOD FAST
ASTRO SIT FAST + TOP CROLL L

PPE **ASTRO® BOD FAST** NEW to Flints this year, this highly technical piece of equipment is best for those who are likely to need to use ropes to access their work point, and then work whilst suspended.

- ✔ Excellent Support
- ✔ Easy to adjust
- ✔ Gated ventral attachment point
- ✔ Easy to "don"
- ✔ Good stowage of connectors and tools
- ✔ Fall Arrest
- ✔ Work Positioning
- ✔ Integrated CROLL for Rope Access
- ✔ Suspension
- ✔ More comfortable for working whilst suspended

Certified to CE EN 361 EN 358 EN 813 EN 12841 type B EAC

Complete Harness kit	size	weight	code	price
ASTRO® Bod Fast	1	1,900 g	PETC083AA01	£327.50
ASTRO® Bod Fast	2	1,980 g	PETC083AA02	£327.50

WIRE ANCHOR STROPS

Wire Anchor Strop These 7 mm diameter galvanised steel wire strops are commonly used in the rope access industry to provide a moveable anchor point over RSJ's, truss, and roof beams etc. They have a ferrule-secured thimble eye each end and a protective plastic sleeve. EN 795:1997 has no requirement for Class B anchors to have a breaking load marked on them. Before use check for damaged wire, wire slipped in the ferrule, damaged or deformed ferrules, broken strands, damaged protective cover and deformed eyes. CE marked EN 795 Class B.

Wire Anchor Strop 7 mm	length	weight	code	price
	500 mm	260 g	SAFL705	£14.42
	1 m	434 g	SAFL710	£16.46
	2 m	802 g	SAFL720	£21.25

Lanyards

A lanyard is a series of components designed to prevent a person or an object from falling. Typically it would consist of an anchor point, a karabiner, a length of webbing or rope, an absorber and another karabiner.

We have divided our section into three parts:
Work Positioning • Fall Arrest • Small Tool Lanyards

At least two deaths have occurred over the past few years due to lanyard failure so careful choice and training are essential.

The person purchasing fall arrest equipment, which consists of a harness, lanyard and anchor, should be competent to do so.

WORK POSITIONING LANYARDS

NEW TYPE PPE **Rope Lanyard – Type Jane** Dynamic black kermantle rope lanyards with plain sewn ends and plastic sleeves. We offer a kit of a 1 m lanyard supplied with an MGO Open scaffold karabiner [see page 187 for details]. These lanyards can be converted to fall arrest lanyards with the addition of an Absorbica [page 335] secured to the lanyard with a Delta Maillon Rapide [type WIR252B listed on page 184]. Conformity:CE EN 354, EN 795 type B, UKCA, EAC, ANSI Z359.3; CSA Z259.11

Rope Lanyard Type Jane		weight	code	price
length	terminations			
0.6 m	plain sewn ends	100 g	PETL050BA00	£17.50
1 m	plain sewn ends	120 g	PETL050BA01	£19.50
1.5 m	plain sewn ends	145 g	PETL050BA02	£21.50
1 m	sewn ends plus MGO Open	610 g	PETL050BA01K	£72.49

Rope lanyard with a M10T Karabiner and a scaffold hook.

PPE **Rope Lanyard** 12 mm diameter polyamide [nylon] rope lanyards, with a choice of connector. Conformity: EN 354.

Rope Lanyard		code	price
length	terminations		
1.5 m	plain loops each end	WIRLC15BB	£19.10
2 m	2 x M10T Karabiners	WIRLC1221010	£36.57
2 m	M10T Karabiner and one scaffold hook	WIRLCA251	£59.30