You want a pocket for your what?



In the past we have used the analogy of automotive technology when discussing rucksac component design and manufacture It may not be widely appreciated that a substantial value in automotive operational profit is realised in aftermarket and accessory sales; unfortunately the same cannot be said to apply to rucksac marketing despite a healthy turnover in add-on pockets, straps, fanny packs, and waist-belt mounted bumps and lumps.

The advent of the rucksack 'lifetime' guarantee – first added to the marketing mix by Karrimor International – means that the majority of wear and tear warranty claims are dealt with by 'free of charge' repairs and there is just no necessity to hold vast stocks of spare parts. Accessorising load carrying does have the potential to be a major money-spinner, with just a half-dozen quite small items capable of doubling the value of the original rucksac purchase.

Backdrop

Historically, rucksac accessories possibly have a closer affinity to a military past than the major component itself. During England's Civil War, the Trained Bands of Parliamentarians and the mercenaries hired by the Royalists all carried a 'snapsack' - holding, in theory, enough food to last through to the next refuelling point. Often no more than a hessian sack secured bandolier fashion with a rope, it was neither large enough to carry spare clothing (usually non-existent anyway) nor durable enough to protect caches of powder and shot. The latter were carried at hip level on musketeers cross-belts, often linked to the same fastenings as a short sword or dagger. A hundred-and-fifty years or so later and 'snapsack' had become 'napsack' and acquired a shoulder harness, but weighty ammunition and side arms stayed at waist level suspended from a belt that often also held a pouch or two for additional personal equipment.

Over the centuries, belt-mounted containers have become increasingly popular with both military and civilian users. Accessibility, comfort and ergonomic logic have all played their part and now it is possible to spend a day or so in adverse weather conditions without carrying the weightier option of a full rucksac. One British company that seeks to capitalise on past experience matched to new technology is the aptly named Belt Order Systems (BOS) of Saltash in the county of Cornwall. Using understanding gained in both military and police service functions, chief executive David Brady has developed '... a modular system that allows you to carry only what you need for where you want to go', to quote the company's brochure.

The heart of the BOS is a heavy-duty web belt to which may be fastened a number of dedicated accessories to support a hydrator pouch, water bottle, emergency aid kit, torch, mobile telephone, camera, trekking poles, and travel necessities. There are also a number of broader utility pouches capable of holding lightweight waterproof shell garments, food and navigational aids. The outer fabric is DuPont Cordura, specified for its anti-abrasive qualities, with linings of either PU or neoprene coated nylon according to intended use. Brady has designed a selection of body-hugging rucksacs to add a long-distance facility and complete the system.



The BOS system includes minimalist rucksacs for bulky items of kit.

... worth a thousand words

An art form in its own right, photography in wild and semi-accessible areas has been the driving force for a number of major developments in dedicated accessories. Lowe Alpine, founded by Greg Lowe, is known for its activity in support of the dedicated traveller. Some years ago, within its product range, specialist photographic equipment became such an important part of the regular turnover that the company licensed a separate organisation, Lowepro, to maximise the development in close harmony with the end users. Lowepro's current catalogue details the profiles of fifty-three world-class photographers – all of whom have contributed in some way to the current product range. A straight 'steal' from military usage has been the development of the company's Street and Field system that consists of more than thirty individual items linked to a nylon waist belt base. Again in military style, the nominal additions are two forms of shoulder



Vaude Desert Runner. Twin water bottle cages and a central pouch.



Deuter Kid Cmfort III, complete with Teddy Bear.

harness to which can be linked as many insulated pouches as may be required to hold cameras, lenses, filters and film.

Lowepro says that it uses over a dozen fabrics in the production of a range consisting of several hundred different products, and its whole output suggests the careful matching of the relevant performance factors of air-textured, ballistic and rip-stop nylons, rubber coated and rip-stop polyesters, closed-cell foams, leather and high-impact acetal hardware. With systems and dedicated packs in operation in almost every latitude and hemisphere, the company says that its feedback process is probably second to none.

Aimed rather more towards the gifted amateur, the photographic gear from German manufacturer Tatonka GmbH uses a mixture of Cordura and its own Textreme textured nylons for the outer shells of a series of bags, pouches and daypacks. The continuing popularity of adventure racing is marked by the Photo/Video Runner rucksac that has a divided base compartment to hold technical hardware in its own padded security. Another useful product is a lightweight nylon insert unit that enables camera and accessories to be carried inside a standard daypack protected from the crumbs, squashed fruit and leaking liquids that living with a daypack can produce in quantity.

The loads goad

The personal requirements of the travelling man or woman are possibly the most effective 'pointed stick' aimed at designers of rucksac-based accessories. The natural habit of keeping the elements of eating, sleeping and washing all together but in separate areas has produced a wide range of answers – all of which make a significant contribution to the profitability of the load-carrying product market.

A company that makes much of its 'green' credentials is Vaude, headquartered in Tettnang, Germany. The proud boast that the majority of its output is totally recyclable is carried through into the accessory range with a number of products produced in rip-stop and plain polyester.

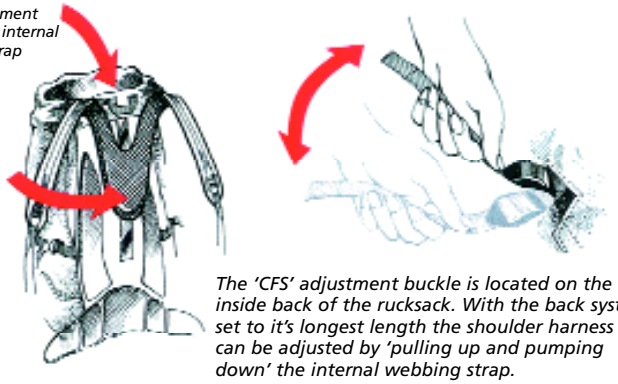
Rucksac Update

Its almost a quarter of a century since the realisation that the human skeleton varied in back length dawned on the rucksac manufacturing industry and was transformed into a market driven concept to offer suitably varying frame lengths to users. The first designs were limited to short, medium or long internal frames or else carried a complex system that required fitting to the user and locking into place. Any further adjustment of the latter was a major exercise in Meccano-style engineering and required the tactile dexterity of an expert pickpocket to achieve a level of comfort.

Subsequent developments have been almost universally variations on the extensible ladder theme, with the treads being set at anything from 2.5 cms (1 inch) to 5.0 cms (2 inches), which is fine if you are an exact match to any of the divisions but decidedly uncomfortable if you arent. These systems are built in a variety of combinations of nylon webbing, ladderlock fastenings, nylon rod and aluminium strip. The engineering involved has been conditioned by economics in continued ascendancy over ergonomics. Like the clothing aspects of military life, achieving personal comfort during this period has been rather along the lines of the Quartermaster Sergeant's favourite phrase, "Don't worry soldier. It'll fit you when you iron it."With that quality of experience in mind, it will be appreciated that two recent developments in textile engineering that appear to work from a genuine rucksac-to-fit-all approach must be greeted with a mixture of whoops of joy and sighs of relief.

An infinite variety

In the scope of international affairs it has to be said that UK-based Wynnster Outdoor Leisure does not exactly excite the attentions of the multi-billionaireset. However, from its headquarters in a small town just to the south of London, this company has spent the past five years steadily moving out of its original family camping format into the role of an innovative brand owner with a genuine ability to encourage new ideas. Rucksacs have formed part of the product range for many years, but the 2002 series includes work by freelance designer Carol McDermott that places the top two models of the new Viper backpack firmly in the trekking and technical sector of the market.



The 'CFS' adjustment buckle is located on the inside back of the rucksack. With the back system set to it's longest length the shoulder harness can be adjusted by 'pulling up and pumping down' the internal webbing strap.

Carol's work embraces the Comfort Fit System (CFS) that allows a user to adjust the back length of a rucksac to achieve an exact physiological match. CFS is an engineered design using a combination of nylon webbing and locking buckles which interact to give absolute adjustability between the physical parameters of the upper and lower extremities of an aluminium guide bar. The centre section of the shoulder harness slides up and down the bar in response to the push-pull action of an internally mounted adjusting web. Lock-off is achieved with a muscular tug downwards on the same web.

The company has paid close attention to the needs of runners operating over a variety of terrain ranging from desert to urban sidewalks. For example the Rock Runner is a 10-litre pack, with a padded back, that can accommodate enough kit and emergency supplies to see most enthusiasts through a serious day on the hill. Desert Runner (2 water bottle cages) and Road Runner (1 water bottle cage) match technical specifications to their intended environments and also keep the whole load suspended over the strength of the hips and thighs.

Switzerland-based Mammut AG has a small number of accessory items – mainly of the bumbag or fanny pack variety – but has recently released details of its Legbag, a 5 litre capacity unit, complete with a waist belt and a Western gunslinger's thigh strap, that is designed to sit just below the hip rather in the manner of a removable cargo pocket. Since Mammut has recently acquired the Norwegian Ajungilak company, it may be anticipated that the rucksac and travel accessory range will be expanding in scope in the very near future.

Traveller's aids

Experienced travellers, whether using rucksac, suitcase or soft travel bags, organise their wardrobe and personal kit with the aid of stuff sacs – or something similar – to separate clean from dirty, footwear from shirts and wet from dry. California's Eagle Creek Inc. has developed its Pack-It System to do just that and also to promote the cause of crease-free arrival when you arrive at the top hotel in town after crossing the Empty Quarter in the company of a camel or two. Instead of the stuff sac the company has developed a range of 'folders', cubes, toiletry bags, compression bags and shoe sacs to cope with almost every form of packing problem. Fabricated in polyester weaves and mesh knit in most instances, all the designs will fit neatly into a choice of outer coverings. The crease resistance of the polyester coupled with the necessity to fold clothing to fit the packs ensures a high success rate.

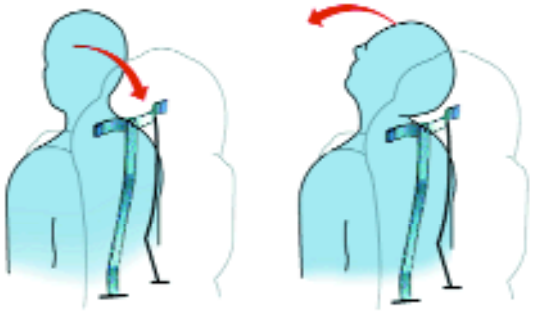
A number of travelling experiences and strenuous activities are marred by the spectre of thirst and possible dehydration. Water is heavy and awkward to manoeuvre, and has the unfortunate ability to appear in its loose form at the most impossible moments. Which is why the development of modern hydration systems with their on-demand one-way valves has been so successful. Essentially tough plastic pouches with a range of capacities from 0.5 to 2.5 litres, equipped with a fill cap – a length of valved tubing – and a carrying handle, they have been adopted by almost all the major rucksac manufacturers as add-ons to the base specifications in most larger models. Which is good news for trekkers – but what about the long-distance runner, x-country skier and the mountain biker?

Well, they rely on companies such as Deuter from Gersthofen, Germany. This company has designed a series of packs around two sizes of hydration systems and using its own Air Stripes air conditioning against the wearer's back. Manufactured in Deuter's self-branded Microrip polyester, the insulated bag and water pouch contour to the user's body anchored by a mesh harness and waist belt. Depending on size there are one or two zipped pockets for emergency kit

The system is simple in operation and effect, although a little more development could turn the concept into an adjust-on-the-back system which would then bring the laden weight of the rucksac into the equation. All webbing stretches to a greater or lesser degree and thus in some measure distorts the unloaded harness adjustment when the rucksac is hefted on to the wearer's shoulders. The application of torsion straps at shoulder or hip is as much a correctional input as it is a means of moving the weight from shoulder to hip or vice versa. Nevertheless the Wynnster CFS adjustment does move a long way towards catering for the infinite variety of the human condition, or at least as far as our backs are concerned.

Another British company, Berghaus, of Sunderland in North-East England, has enjoyed an international reputation as a purveyor of rucksacs for many years. Its development team was one of the first to incorporate a degree of personal adjustability into technical rucksacs and a few years ago it produced an infinitely length-adjustable a system based on the ability of heavy-duty hook 'n loop fastening to hold a measure of weight, even in shear. Originally offered solely in the top-end Cyclops models, Berghaus has recently launched its Atrek and Atrek Pro series and incorporated a similar system into the specifications.

Apart from the hook 'n loop webbing, the operational components are aluminium staves and a high-density polyethylene (HDPE) backplate that provide structural integrity and load transfer respectively. Again the adjustment of harness height can only be accomplished with rucksac at rest and thus needs a measure of over-compensation for laden weight to ensure a close personal fitting. Both the Berghaus Cyclops III and Atrek series incorporate an occipital space above the harness assembly to give clearance for a helmeted head.



One of the features of the 'Cyclops III Back System' is 'Occipital Cavity'. An aluminium frame top cross bar is curved away from user's head; enhancing usability by ensuring no contact can be made with the frame when tilting the head back.

A little closer

An enormous amount of frustration is inherent in the process of rucksac harness development. An over-complexity in physical structure would certainly solve the problems of wide variations in length and the perceived requirement to have-on-the-back adjustment to cater for laden weight, but would certainly add to unladen weight and product cost at retail.

The two systems described above are significant steps along the road towards the goal of accurate personal adjustment. Whether there is sufficient volume in the marketplace to justify further immediate expenditure is perhaps debatable.

and food. The Air Stripes system consists of two upright foam 'stripes' covered in a mesh knit and with a central channel to direct a flow of air over the weare r's spine. Only 5% of the surface area is in contact with the user's back.

Small children can travel with equal comfort using the Deuter child carrier and an obliging adult as motive power. The top specification from a range of four units is manufactured in PU-coated, 600 denier polyester fabric and carries every scientific aid for the p rotection of the child including an ergonomic carrying system with as much closed cell foam as the best armchair, a full H-shaped safety harness, padding to protect baby's knees, head and shoulders, double hand grips (saving pare n t 's hair), pockets for necessities – including a special one for the Teddy Bear (also supplied), re t ro reflective reflectors, an integral sun shade and a fold-out stand to take the strain when the 'engine' needs a rest. The only exception is an all-enveloping nylon rain cover, and that is available as an optional extra, but only for the child.



Bush Mission Kit's Pod. A 21st century hammock.

If there 's a prize going for the 'got to have everything' rucksac user, then we have two excellent entries in the competition. First, the Gear Keeper range from US-based Hammerhead Industries. Essentially a series of retractable tethers fastened to a belt or shoulder harness, they p rovide security for a wide variety of items such as a mobile phone, a compass, a whistle or a flashlight. The base units come in three 'force' levels depending on the item being secure d .

The second entry has to be the aptly named Pods, from Bush Mission Kit Limited in Bedfordshire, England. These a re the 21st century version of the hammock, available in two sizes and fabricated in nylon taffeta. Supplied complete with karabiners and webbing ratchet straps for hanging, the kit also includes travel packs suitable for attachment to any rucksac or belt system.

Value added

Within these pages it is not possible to cover every accessory that is produced to make the rucksac user's life more comfortable or interesting. As has already been noted it is possible in theory to double the value of the base unit with the application of pockets, pouches and additional hardware. If asked to place a practicality value on the o fferings, it is possible that the hydration packs and travellers packing systems would get the writer's vote. The main point is that the textile technology input is as great for these items as it is for rucksac design and manufacture. Who needs an aftermarket?

Derryck Draper

