



DOWN AND OUT

When the temperatures drop, nothing is quite as inviting as a down jacket or sleeping bag. But all down products are not created equal, so what should you look for when heading to the shops? Rab Carrington from Rab takes a look.

The Basics

So why does a down jacket or sleeping bag feel so warm? Well, this is due to physics - still air is a poor conductor of heat, so most insulative garments exploit this by trapping a layer of still air around your body. The more effective the material is at trapping this air, the warmer it appears, and down, designed by nature to keep birds alive, is very good indeed. It's just like a thermos flask for your body. But that's only part of its appeal; it's also incomparable in terms of packability, warmth for weight, longevity and resilience. With such great credentials it's no surprise that down equipment is highly sought after, but in order to get the best out of it you need to choose the right product for you.

Temperature Ratings

You'd think that rating down equipment would make for an easier choice in the shop. Well, almost. Firstly only sleeping bags get temperature ratings, not jackets. This is because sleeping bags are generally only used for sleeping, whilst clothing can be used at many differing levels of activity so cannot easily be pigeon holed. Secondly sleeping bag ratings are a huge conflict area and can cause great confu-

sion due to differing manufacturers' guidelines and materials. Some things to bear in mind when making comparisons between manufacturers ratings are as follows:

When comparing synthetic and down bags..

It is unwise to do a straight comparison, as synthetics are, on the whole, over rated. Generally ratings on down bags are about right and if anything are often under rated.

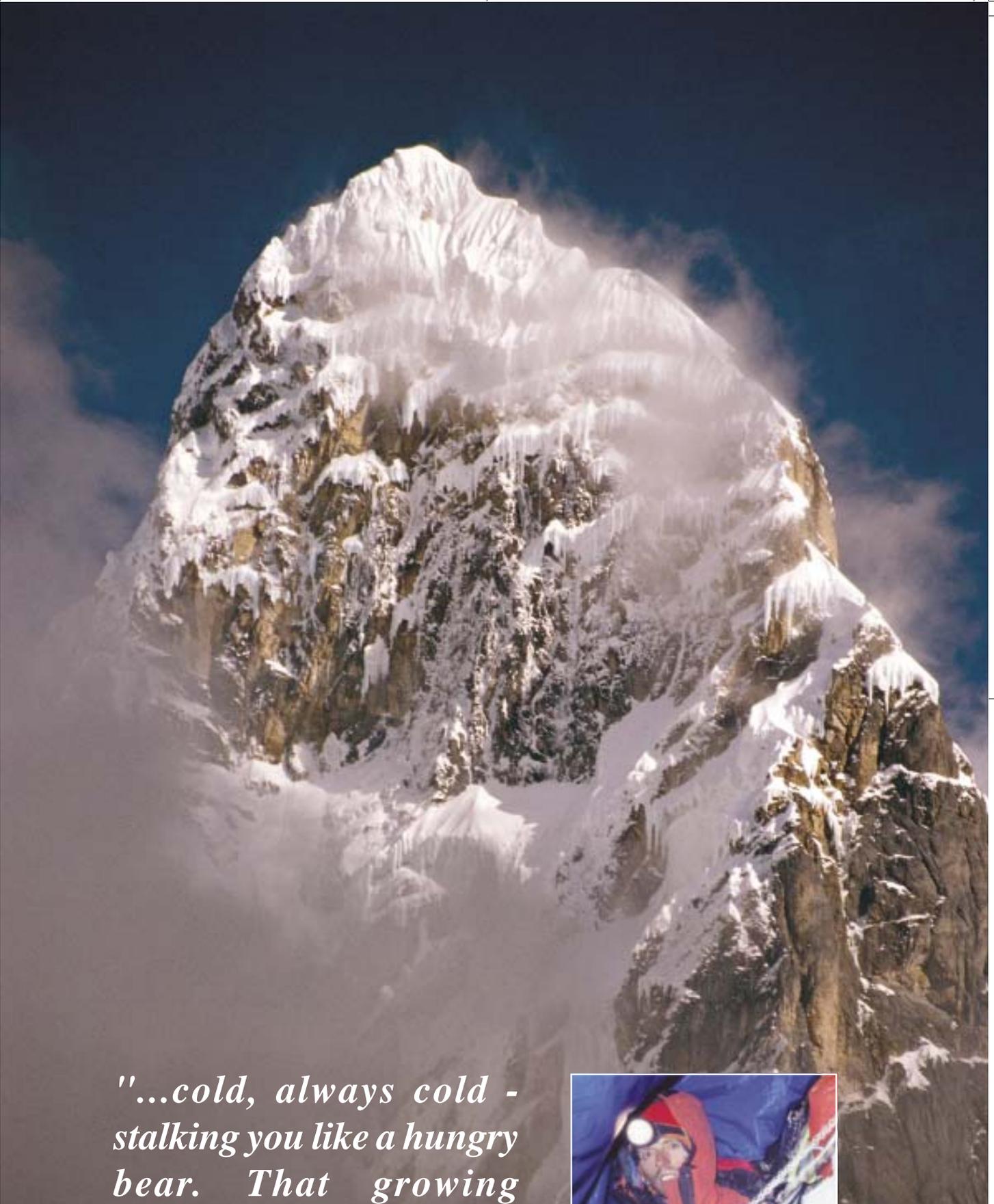
Listen to the shop staff

Go to a specialist outdoor shop. The staff there can usually draw on a wealth of experience of their own and from customer feedback.

About manufactures stated ratings

The ability of a sleeping bag to meet the stated rating on the bag depends on a number of factors including: people's metabolism, level of fitness, degree of fatigue and hydration, standard of diet, type of climate and altitude, wind conditions, humidity and type of accommodation. These will all have a profound effect on how warm the bag is and all warrant serious consideration. ▶

(TOP) Cold times. Choosing the right bag will make your life a lot more comfortable. Credit: Rab (RIGHT) The South East Face of Jirishanca (6126m), Cordillera Huayhuash, Peru. Credit: Al Powell, who with his desire to seek out suffering is an ideal tester for down equipment. (INSET) Al on the 2nd Bivi, Arwa spires, Greenland. Credit: Al Powell.



*"...cold, always cold -
stalking you like a hungry
bear. That growing
insidious discomfort one
can only escape through
sleep.."* - Al Powell, on Greenland in winter.



EQUIPMENT

Down Quality

The quality of down is basically measured in two ways, fill power and quality:

Fill Power

This is a measure of the strength of the down or its ability to resist compression under a standard compression force, but also how well it can loft. The standard method for measuring fill power is set down by the IDFL (International Down and Feather Laboratory) using the Lorch Fill Power Meter. Under this method a fill power of 750+ indicates that a 30g sample of down will occupy 750 cubic inches when subjected to a standard force of 94.25g in a cylindrical tube measuring 284mm diameter. Consumers should be aware that there is an American Fill Power Meter, which generally gives a higher reading on top quality downs. This can make a down appear a better quality, when in fact it is the same or slightly worse. Remember that any down as a raw material when placed into a sleeping bag or jacket will lose a certain percentage of its fill power. This loss can be increased further depending on how the bag is stored and also how dirty it gets from body oils and other substances.

Down Quality

Down is graded according to the mix of pure down clusters to small feathers. This is expressed as a ratio i.e. 96/4, or

sometimes as a percentage 96%. Some claims have been made that down needs a small amount of feather to give the material substance, but this is not true. The simple fact is that the purer the down, the better it will be at trapping air and thus warmer. Another consideration is the maturity of the down. To be effective at trapping air the down needs to have come from a mature Duck or Goose, where the down cluster has had time to develop, becoming larger and stronger.

Lower quality downs generally come from young birds of which there is an abundance in this country due to slaughtering for food by the supermarkets. The quality of the end product is also affected by the way the down is handled from source, in terms of cleaning and transporting. This means that for maximum warmth you need to look for maximum quality in the shop, and is why low grade high-street brands will always be out performed by high quality specialist products.

Construction Methods

The construction methods that are used in jackets and sleeping bags are just as important as the filling quality. The best methods (and most expensive!) are Box Wall (single and double), and Trapezoid. These methods utilise separate pieces of fabric that create individual channels in

GET THE MOST OUT OF YOUR DOWN PRODUCT:



Kenton Cool. A dirty man in a clean bag? Credit: Rab.

Packing

When packing sleeping bags or jackets into a stuff sac that use coated fabrics, turn it inside out beforehand. This will allow the air from the loft of the down to be squeezed out more easily and the bag will pack smaller and re-loft a lot easier.

Feather Leak

If a feather from the down pokes through the fabric, never try and pull it out – pull it back into the bag or jacket from the inside. This stops the hole getting bigger and additional down escaping in future.

Mats

Always use a sleeping mat. This stops heat being lost through conduction into the ground. This is especially important when you consider that when you lie in a down bag you squash most on the insulation on the underside limiting its ability to provide any insulation.

Storage

Always store product loose in a cool dry location. Most reputable manufacturers will supply a cotton storage sac for sleeping bags which is also fine. Never keep down products stored in a storage sac or even worse a compressed compression sac, as this will damage the down irreversibly. Never store down damp, always make sure the bag is well aired, otherwise it will smell and the only remedy will be to have it cleaned professionally.

Liners

It is inevitable that all down bags will need to be cleaned after a time, but using a liner will reduce the amount of body oils and dirt entering the bag.

Cleaning

Due to the long life of a quality down bag (10-15yrs) - they will inevitably need to be cleaned at some stage. This should only be done by a specialist company, as DIY can cause more damage than you think. W. E. Franklin (0114 2686161), are a specialist cleaning company, who for around £30 will clean and return your bag or jacket.



between the inner and outer fabrics of the jacket or bag. These types of construction vastly reduce the opportunity for cold spots and as such are used mainly in bags. The main other type of construction that is used is 'stitch through' and as the name suggests it is basically two pieces of fabric that are sewn together. This is mainly seen in jackets, as it allows more freedom of movement combined with adequate insulation for mountain use.

Shell Materials

Shell materials are as important as the down itself. It is these materials that provide the product with durability. It is the shell materials that are the only real variable in producing lighter bags, as the down itself is pretty much a fixed weight. Most manufacturers use a variety of fabrics to perform different functions. At Rab we utilise a variety of fabrics from Pertex®. One of the most important considerations is the ability of the fabric to be 'downproof'. Fabrics achieve this through a process known as 'calendaring' - this process applies a heat to one side of the fabric and seals it stopping the down escaping. Strength is also important for technical wear, and top end fabrics feature ripstop to provide additional durability. This is essentially using two threads instead of one, and gives the fabric a grid like appearance. There are two main types of fabric:

Coated fabrics

These fabrics have a coating on their inside face, affording the bag more protection from wind and snow plus having the advantage of increased protection against water. Pertex Endurance is a fabric that does this job extremely well and is used by a number of manufacturers, including ourselves. Coated fabrics, will to some extent, give the bag a higher thermal efficiency due to the amount of air being trapped that is not able to escape.

Uncoated fabrics

These fabrics feel softer and lighter than coated ones and arguably provide a more comfortable night's sleep night after night. Recent advances in the technology required in the production of fine yarns suitable for outdoor apparel has enabled a new breed of 'superlight' fabrics to be born. Pertex Quantum from Perseverance Mills weighing in at 30g/m2 is one of lightest. The unique construction of this fabric offers the user outstanding strength to weight ratio with a super soft silky feel - which actually will allow down products to loft better. ||

Thanks to Rab for help with this article. More information about Rab products can be found at www.rab.uk.com. Made in Sheffield, Rab clothing is used in some of the most inhospitable environments in the world.



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