

**BACKPACKING  
AND BICYCLING  
CANNONDALE**

FALL & WINTER

One third the land mass of the United States, more than 760 million acres, is undeveloped, uninhabited territory, much of it still wilderness. For three centuries, a national compulsion to tame the continent led to the exploitation and effacement of the other two thirds.

What's ironic is that in the process of taking over the land, our advanced industrial society has created in us a desperate need to return to it.

Suddenly, and barely in time, we've begun to see that beyond the wonders of its natural beauty, the wilderness keeps the secrets of survival, ours as well as that of all life. We're finding that the spoils of "progress" — the luxuries and conveniences we've worked so hard to gain — are failing to fulfill us in any substantial, enduring way, while even a few hours in the filtered sunlight of a silent forest or along the pebbled shores of a glacial lake, restore the inner peace and satisfaction which modern civilization has taken away.

Colin Fletcher "re-remembers that happiness has something to do with simplicity. And so, by slow degrees, you regain a sense of harmony with everything you move through — rock and soil, plant and tree and cactus, spider and fly and rattlesnake and coyote, drop of rain and racing cloud shadow. You are free to go out when the world will let you slip away, into the wildest place you dare explore. When you get back at last from the simple things to the complexities of the outside world, you find that you are once more eager to grapple with them."

### **BACKPACKING**

Shortly before World War II, Jan Bergan's tubular steel frame packs began replacing the heavier, traditional Trapper Nelson wood and canvas packs in use at that time. In the years following the war, the industry advanced rapidly. Space age materials and techniques were utilized by pioneers like Dick Kelty and Gerry Cunningham in designing and producing the predecessors of the lightweight packs we're familiar with today.

The state of the art was well advanced when, in 1970, four enthusiastic guys rented a second floor loft over a pickle shop in Cannondale village. They were convinced they could improve upon the current



designs, and initiated a broad research program. After intensive testing and evaluation of existing equipment, they came to two basic conclusions.

### **An Internal Frame**

First, an internal frame design had distinct advantages over an external frame. By permitting the pack to ride closer to the back, it ultimately meant more comfort for the user. Moreover, experiments proved that internal frame packs could have equivalent capacity with considerably less mass and were trimmer, easier to handle and more maneuverable in bushwhacking and tight climbing conditions than the relatively unwieldy, ladder-like external frames. The innovations that resulted from these efforts are now incorporated in the lightweight, contoured internal frames of the Cannondale Excursion and Wilderness packs.

### **A "Suspender" Harness**

Secondly, they discovered that even a rudimentary wraparound shoulder harness with the multiple adjustments it afforded, together with a padded waist belt, was far superior to any other suspension system. A concentrated development program with virtually dozens of prototypes produced our current design (known around Cannondale as the "suspender" harness). This system has now been tested extensively both by our own people and outside professionals, and the reports are impressive.

The shoulder strap extensions are attached to the bottom corners of the frame. They pass up and across the pack on the diagonal, through a retainer patch in the upper center, over the opposite shoulder and down to the other corner, just like the old-type suspenders. Therefore, when you tighten the shoulder straps, you lift the bottom of the pack and automatically draw it into the small of your back. The pack's vertical alignment can then be adjusted by the two straps on top of the shoulder pads.

By comparison, the suspension systems of most competitive packs employ only one shoulder strap adjustment point, and the straps themselves do not terminate at the lower left and right corners, but rather at a point just above the shoulder blades. When these straps are tightened, the pack is raised and pulled in at the top and out at the bottom — the opposite of our system. This creates a pivot point in the top middle of your back, which is innately unstable and puts too much pressure on the front of the shoulders. Even those packs that do have two separate adjustment points largely nullify the ad-

vantages, by either not wrapping completely around the shoulders and down the back, or by failing to cross the extension of those straps and lift the pack from each bottom corner.

In **Pleasure Packing**, Robert S. Wood discusses a system similar to ours, which he calls "the load spreading harness", and he considers it "peerless". He does note, however, that some experienced backpackers are skeptical of its virtues because it is slightly complicated in appearance and costs more than the traditional system. Others claim, according to Wood, that when the harness is combined with an external frame, the pack tends to ride too far from the back and swing from side to side. We agree with Wood on both points — the "suspender" harness is expensive, but it's worth it; and its reduced efficiency on an external frame is yet another reason why the harness is most desirable when combined with an internal frame.

### **Some Words of Caution**

Backpackers will forever argue about the characteristics of a good pack and which packs are best, but what it all comes down to is this: the backpack that meets your requirements for capacity, has a profile compatible with the terrain in which it will be used and is most comfortable — is the best pack for you.

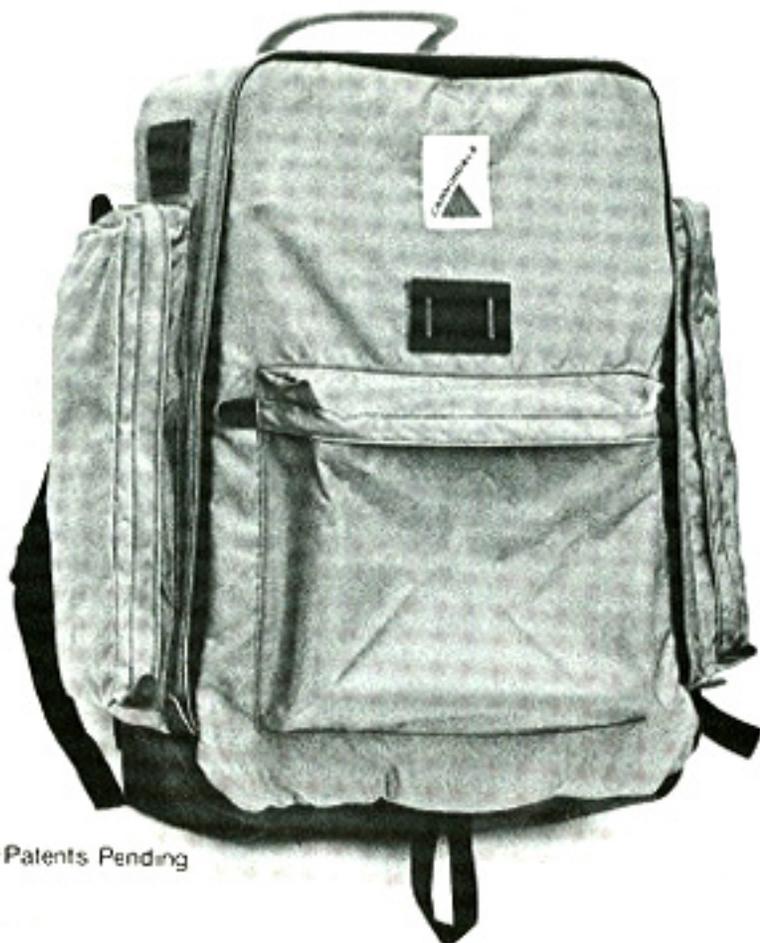
Because of the expense involved in buying equipment today, it is important that you fully determine your requirements before purchasing a particular pack. If you are into the sport, you probably know what type of pack you want. If not, we suggest that you rent several packs (as well as any other equipment you're considering buying) from your local mountain shop and really give them a workout before deciding exactly what you want. In addition, we strongly recommend you read at least one of the following: Harvey Manning's **Backpacking: One Step At A Time** (Vintage Books, \$2.95); **Pleasure Packing** by Robert S. Wood (Condor Books, \$3.95); and Colin Fletcher's **The Complete Walker** (Alfred A. Knopf, Inc., \$7.95). All three are excellent guides to most aspects of the sport.

*Summit! On Tuesday, February 13, 1973, at 8:05 a.m. and 22,834 feet above sea level in the Andes Mountain System, Tom Limp and six other members of the Freelance Alpine Research Team reached the top of Aconcagua — highest peak in the Western Hemisphere, and one of the most dangerous and challenging climbs in the world.*

*In the foreground, one of four Cannondale Excursion packs (OP 40) used in the assault.*



## THE EXCURSION SERIES



**OP40** - Patents Pending

Although the OP 40's 2,519 cu. in. capacity places it in the large pack class, it is not designed for extended use. But it's a great specialty pack — the most comfortable one on the market — for relatively short excursions of all kinds, such as ice climbing, cross-country skiing, snowshoeing and just plain day hiking. The pack can be used for overnight trips too, but we don't recommend it for anything longer. We've found 26 pounds to be the comfortable load limit.

The OP 40 pack has one version of our "suspender" harness system, a padded waist belt, a three-dimensional internal stay frame, and an aluminum handle for easy off-the-back handling. Three large outside pockets provide quick and easy access to equipment, and removable partition packs at the top of the main compartment simplify weight distribution, loading and organizing.

As a special purpose pack, the OP 40 has really compiled an impressive list of credentials. Many amateur and professional outdoorsmen consider the pack an indispensable part of their specialty equipment. Kevin Couch of Appalachian Outfitters in Oakton, Virginia claims it is one of the most comfortable Alpine climbing packs he's ever worked with. Tom Limp has this to say about the OP 40: "Flying down to the Andes, we took off the straps and shoved the packs under the plane seats. We carried them in the top of our large expedition



**OP41** - Patents Pending

packs up to base camp, then we dropped those and used the 40's for the assault. Medicine and other stuff we had to have at hand were carried in the partition packs. I used mine as a pillow and knew right where everything critical was at all times. As far as balance and weight control go, the packs are unsurpassed."

The Excursion pack OP 41 is smaller than the 40 (2/3 the capacity, 9 oz. less weight) and has no front pocket. It's probably the only internal frame pack of its size with a sophisticated suspension system (the "suspender" harness) and a padded waist belt for weight distribution. Like the 40, it is an exceptional specialty pack for cross-country skiing, climbing, canoeing, day hikes and cycling. Due to its size we do not recommend it for overnight use, except as a supplemental pack which can easily be carried by women and children. It has a practical load limit of approximately 18 lbs.

### Specifications (40 and 41):

- leather bottom
- water-proof nylon pack cloth
- polylined walls
- ski-carrying sleeves
- a quick-release Lexan® belt buckle
- Capacity: cu. in. OP 40 - 2,519 OP 41 - 1,762
- Weight: OP 40 — 52 oz. OP 41 — 40 oz.
- Colors: OP 40 — Red, Cal. Blue, Desert Tan.  
OP 41 — Red, Cal. Blue.



These strong little packs fit smoothly into the top of the OP 40 and OP 41 main compartments. They provide a positive way to keep small, heavy objects like mess gear, first aid kits and photographic equipment from shifting to the bottom of the pack. They are easily removed and have a carrying handle for convenient out-of-pack use.

- capacity: OP 40A — 675 cu in.  
OP 41A — 372 cu. in.
- weight: OP 40A — 7 oz.  
OP 41A — 5 oz.
- color: Red



**OP40A**

**OP41A**



## OP42

Since rucksacks support the load entirely from the shoulders it is essential that they be lightweight, comfortable and well made. They are generally used in very active sports like climbing, cycling and downhill skiing, therefore shortened shoulder pads that do not bind and chafe around the front of your armpits are also desirable. The OP 42 was designed around these requirements. It is a good, strong rucksack, but for a comfortable carry we recommend you keep your load under 12 lbs. and be careful not to pack sharp objects close to your back.

## OP44

The traditional duffle has become part of the American sportsman's scene. Cannondale's OP 44 duffle (center of picture) is made to carry his heaviest gear. It has a polyliner that supports the load and maintains the duffle's shape. Incidentals can be stuffed in the end pockets.

We've found the duffles to be indispensable on week-end ski trips. They're great car bags — much easier to handle than suitcases.

The BD 10 duffle (top and bottom of picture) is a light, simpler version of the OP 44 with no end pockets or polyliner. It is made of the same strong nylon material.

- length: 22 in.
- height: 10 in.
- colors: Red, Cal. Blue

## OP43

This day pack is an all-nylon version of the OP 42. It is especially suited for cycling and short outings but the same load and packing limitations noted under OP 42 apply here.

### Specifications: **OP42 , OP43**

- water-proof nylon pack cloth
- leather bottom (OP 42 only)
- adjustable padded shoulder straps
- adjustable quick-release Swedish buckle
- covered dual-zipper on main compartment and front pouch
- tough polylined pack walls
- capacity: 1,057 cu. in.
- weight: OP 42 — 13 oz.  
OP 43 — 11 oz.
- colors: Red, Cal. Blue







## WILDERNESS SERIES

After three predecessor packs, one and a half years of research and development and six months of testing and modifications, the Cannondale Corporation has introduced a distinctive new line of internal/external frame packs — the Wilderness Series. By using an internal frame design with the "suspender" harness at the top of the packs and an external extension of that frame with a wide padded waist belt at the bottom, the Wilderness Series combines the best features of an external frame design with those of an internal frame design.

The packs have the same capacity of most large external frame packs with considerably less mass on your back. The main compartment of the biggest pack in the series (OP 60) has large capacity (2,500 cu. in.) yet it is only eight inches deep, fourteen inches wide, and twenty-four inches high. This narrow profile hugs your body and holds the weight in close, which means a very comfortable carry and considerably improved maneuverability.

Previous internal frame designs have had several drawbacks. First, they have allowed a heavy pack to settle too low on the base of the back, causing premature fatigue. (It is important to support a heavy load on the small of the back, while containing the load itself above that point.) Second, they have not provided an adequate means of attaching a heavy-duty waist belt, and third, it has been extremely impractical, if not uncomfortable, to carry anything on the outside at the top and/or the bottom of the packs. These are the reasons, for instance, why we do not recommend the OP 40 for extended use and place a comfortable load limit on the pack of 26 lbs.

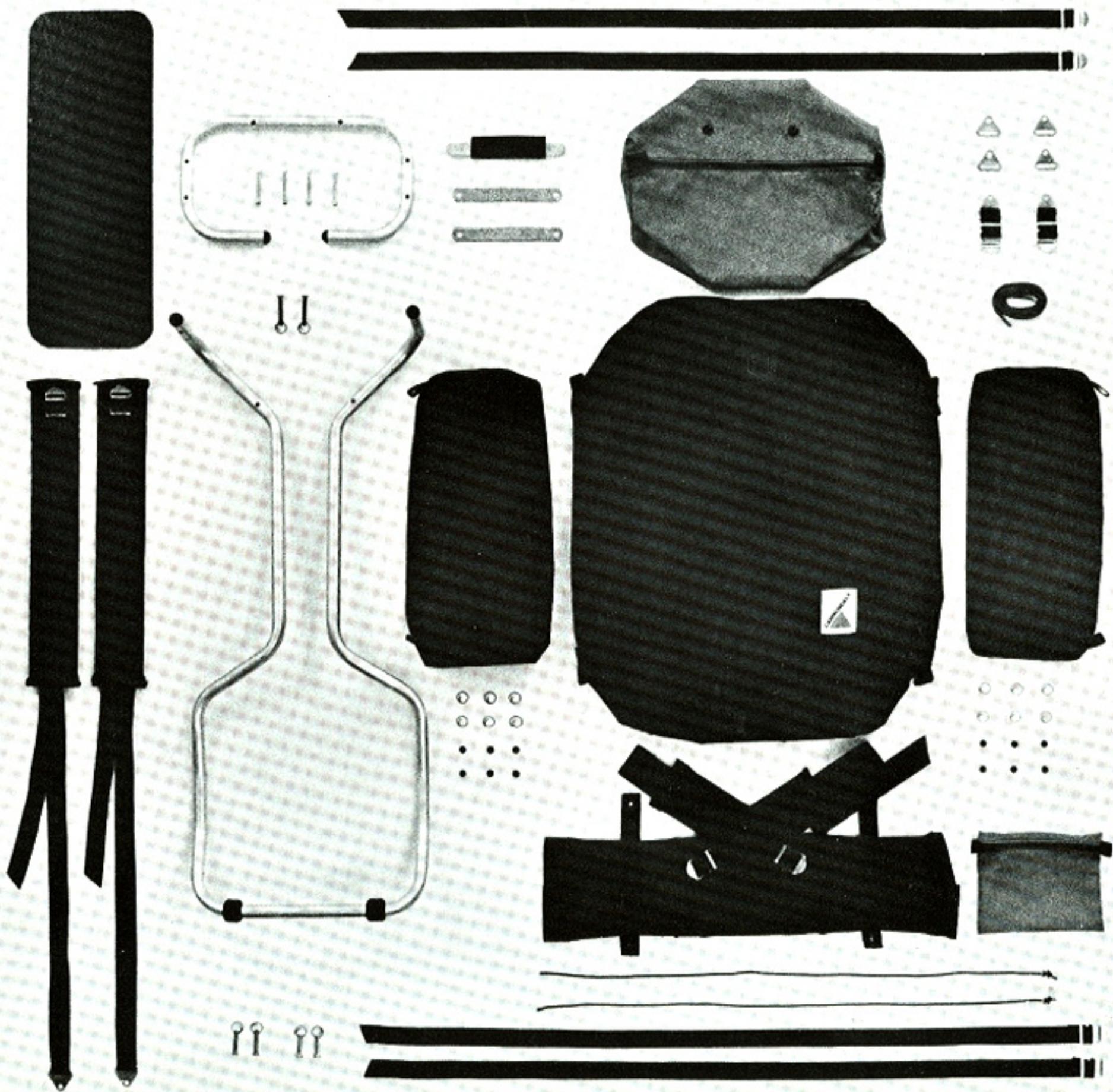
The Wilderness Series solves these problems. The frame extends through the pack at the bottom where a wide contoured padded waist belt with anti-roll straps is properly positioned to support heavy loads. Straps are anchored to the top of the pack and to the back of the belt for carrying tents, ground cloths, sleeping bags, etc. The straps are captive so that they won't get lost when not in use but can easily be removed when the need arises.

The workmanship of the Wilderness packs, in our opinion, is unsurpassed. All load-bearing seams are double-stitched with size 12 Reda Trusew polyester thread, developed by Coates & Clark for the circus tent industry. (To the best of our knowledge, we are the only ones in the backpacking industry to use this strength thread.) The wrap-around zipper on the main compartment is double stitched and is bar-tacked at each end. All straps pass through frame-anchored swivels and are bar-

tacked to themselves. We have tried to consider all such details and finish each in the best possible way.

The overall result is a superbly made, large-capacity pack that's easier to handle and maneuver, and much more comfortable than any other backpack we have tested.





## THE COMPLETE PACK

- 400 x 400 denier double coated nylon pack cloth
- Tubular aluminum frame, 6063-T832 alloy with a 35,000 PSI yield strength.
- Fire red partition pack at inside top of main compartment (capacity 490 cu. in.)
- Two outside pockets (capacity 275 cu. in. each) with dual zipper pulls. These can be transferred from the sides to the back or two additional pockets can be added for increased capacity. Each pocket is attached with four Lexan® clevis pins and retainer rings.
- Dual zippered main panel opens on three sides for easy access
- Four captive straps (two on the top and two on the back of the padded waist belt) for lashing on tents, sleeping bags, ground pads, etc. All four can be removed easily if necessary.
- Cross-country ski loops.
- Double stitched axe loop and leather patch fitting.
- Leather covered lift bar for ease in hoisting and handling. We suggest that you brand your initials into this leather lift bar cover. Or, mail us the cover postpaid and we'll do it for you free of charge.
- All strapping passes through frame-anchored swivels and is bar-tacked back to itself for maximum strength.
- Contoured 5" wide padded waist belt with anti-roll straps.
- Quick release Lexan® belt buckle.
- Fire red belt pocket (capacity 32 cu. in.) which can be worn on either side. Additional belt pockets are available for those who wish one for each side.



### OP60 — Patents Pending

- Dimensions: Depth — 8 in.  
Width — 14 in.  
Height — 24 in.
- Capacity — 3,049 cu. in.
- Weight — 66 oz.
- Color: Dark Blue, Irish Coffee, Desert Tan.



**OP61** — Patents Pending

- Dimensions: Depth — 8 in.  
Height — 20 in.  
Width — 14 in.
- Capacity — 2,594 cu. in.
- Weight — 61 oz.
- Color: Dark Blue, Irish Coffee, Desert Tan.



**OP62** — Patents Pending

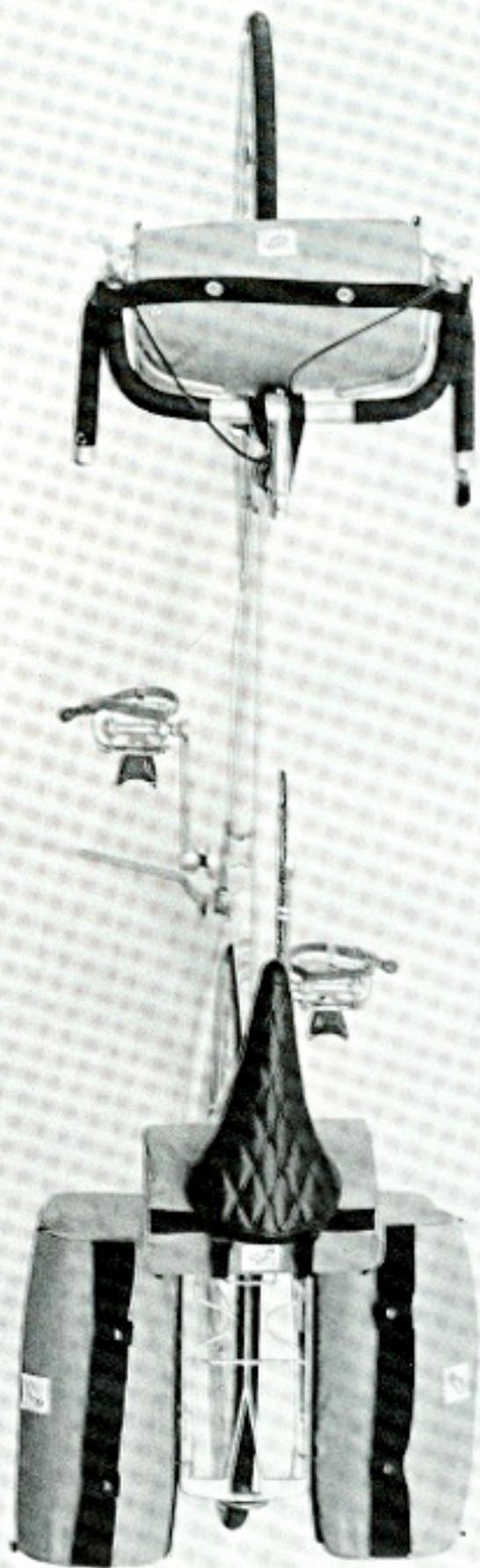
- Dimensions: Depth — 7.5 in.  
Width — 10 in.  
Height — 18 in.
- Capacity — 1,634 cu. in.
- Weight — 38 oz.
- Color: Dark Blue, Irish Coffee, Desert Tan



From left to right — OP 81, 82 and 60. Notice how the three different sizes look proportionately the same on each member of the family.



**The Cannondale  
Bikepack Touring  
System**





### **The Handlebar Pack BP 20** – Patents Pending

This pack is designed for use on drop handlebars. Its tension mounting suspension eliminates the need for a front rack. You can place your hands anywhere on the handlebars and not be hindered in steering or braking. The Handlebar Pack has a clear, weatherproof vinyl map case which snaps on top of the pack for convenient touring navigation.

**Suggested Contents:** Gloves, brimmed cap, extra maps, binoculars, small camera and film, candy.

Capacity: 423 cu. in.

Weight: 4½ oz.

Color: Red, Canary Yellow, Cal. Blue

### **The Seat Pack BP 21** – Patents Pending

This basic pack has been popular since World War I, but Cannondale's modern light materials, quick-release latches, polylined interior and convenient carrying handle have revolutionized the classic design.

**Suggested Contents:** Tool kit, spare tubes and tires, extra chain links, first-aid kit, flashlight, chain lock.

Capacity: 264 cu. in.

Weight: 6½ oz.

Colors: Red, Canary Yellow, Cal. Blue



### **Rear Rack Packs BP 22** – Patents Pending

At last, here are some panniers that really make sense. They can be used together or separately, depending on your needs. They attach in seconds and can be adjusted rearward to provide maximum pedal clearance. The BP 22 packs do not obstruct the use of your rack.

#### **Suggested Touring Contents:**

**Left Pack:** AM/FM radio for weather reports, foul weather gear, toiletries, two gallon collapsible water bag, hosteling sheet, food storage space (rather than carry large food supplies, stop each afternoon and pick up dinner for that evening and breakfast for the next day.)

**Right Pack:** Two sets of underwear, two pairs of socks, extra riding shorts, jeans or slacks, knit shirt, extra shoes, compact alcohol stove and fuel, condiments, water proof matches, bio-degradable soap, vitamins.

Capacity: 1970 cu. in. each

Weight: 13 oz.

Colors: Red, Canary Yellow, Cal. Blue





## **BTS 100**

Our bike tuning stand is constructed of  $\frac{3}{4}$ " plated tubular steel and is extremely stable. Four molded rubber feet prevent sliding and grating. Three polished Lexan® spools cradle the frame and prevent marring of the bike's finish. There are no cumbersome clamps or hooks. The BTS 100 will accommodate virtually every adult bicycle currently manufactured. When sitting on the floor the stand raises the derailleur approximately 20" off the ground — a convenient working height. When placed on a regular-sized table the BTS 100 raises the bicycle to chest level.



## THE BUGGER — Patents Pending

Bikepacking has become popular in the United States only within the last three years, but for more than a century (since 1861, when the Michaux brothers began manufacturing rotary crank "bone-shakers" in France) cycling enthusiasts have racked their brains and wrecked a considerable number of bicycles in attempting to devise an effective means of maintaining bicycle performance while carrying heavy loads.

In 1970, Ron Davis and John Wistrand confronted the same basic problem and developed a solution — the first lightweight bicycle in the world — the Bugger.

A rolling backpack, the Bugger rides on an angle (not unlike the pack it replaces) and transfers all excess weight directly to the road by its own tires. No weight is added to the bicycle itself.

The unit attaches quickly to the seat post with a Lexan® hitch which flexes in vertical, horizontal and rotational directions, absorbing the shock from bumps and curbs. The torsion control arm allows full freedom of movement, so that the Bugger looks and rides as naturally as part of the bicycle itself, and in no way interferes with the handling characteristics of the finest lightweight bicycles.

## Energy Research Study

In March of 1973, the Bugger was chosen to be part of an exhaustive research study on the energy requirements of certain recreational and occupational activities. The lengthy studies are presently being conducted and funded by the University of Tennessee at Knoxville under the direction of Professor Hugh G. Welch, Director of the Department of Applied Psychology.

The project includes both laboratory and extensive field tests on bicycle transportation and applied load carrying characteristics. The tests will determine the effects of various load carrying methods on a bicycle by measuring the calorie and oxygen consumption, heart rate, etc. of the test subjects.

While the program has not yet been completed, reports on the Bugger to date are very favorable. The test subjects carried similar loads in Buggers and on bicycles. All of them preferred the Bugger.

A full report will be published when the testing program is completed.

## BR 2

This is a lightweight version of the BR 1. The open-sling design permits greater versatility in loading oversized equipment: i.e., tents, sleeping bags, cooking gear, etc. For specialized bikepacking, the BR 2 is ideal.

Weight: 22 lbs.

Recommended load limit: 80 lbs.

Load dimensions: 22" x 24" x 15"

Colors: Red, Cal. Blue



## BR 1

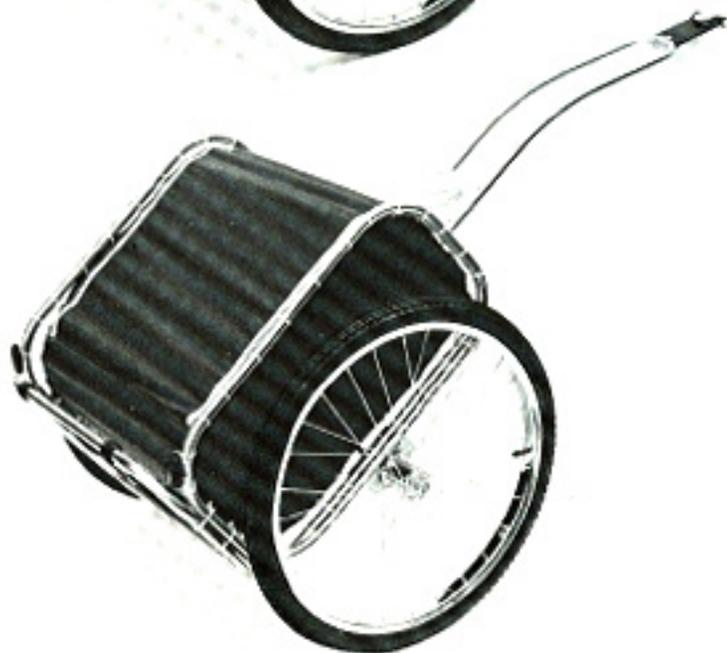
The BR 1 is constructed of strong, lightweight tubular steel and vibration proof fasteners with a waterproof nylon pack. It has premium 24" tires, chrome-plated spoke wheels, heavy-duty hubs with shielded ball bearings and two SAE class (A) reflectors.

Weight: 24 lbs.

Recommended load limit: 80 lbs.

Load dimensions: 22" x 24" x 15"

Colors: Red, Cal. Blue

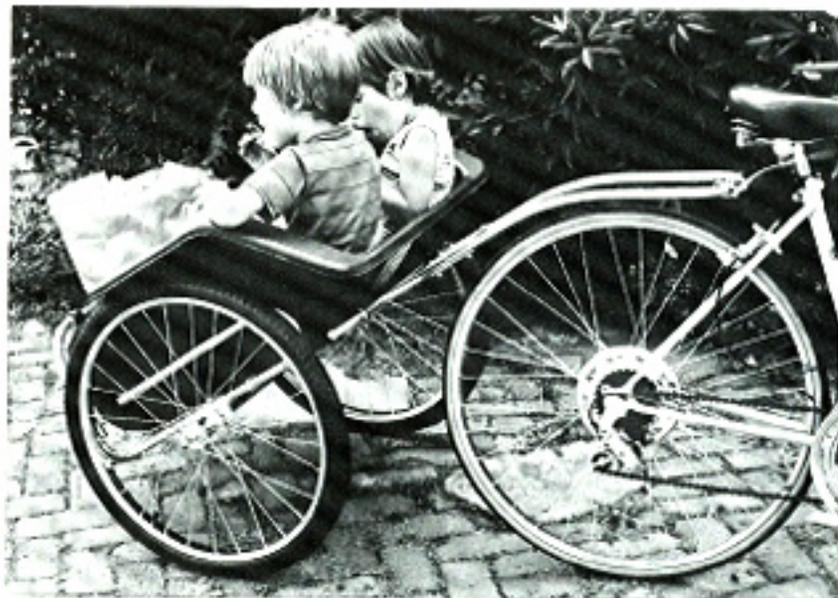


## BC 18

The BC 18 is the safest, easiest child carrier on the market. It is constructed of lightweight, high-impact material. A woman can easily pull two five-year-old children.

Weight: 7 lbs.

Capacity: 1 or 2 children (max. 80 lbs.)





We could have chosen a peak or a climbing term and called our outfit Aconcagua Inc., or the Jamcrack Corporation. We might have named ourselves and the equipment we were designing after one of the founders. That's always safe.

I guess we never really gave the thought of what we should be called much thought. The story of how it simply happened goes back to a day in the early winter of 1970, when our studio, offices and workshop were still over the pickle store.

Mrs. Forrester had just stewed up a batch of pickle relish. We had all the windows open and Jager was barking at the passing 9:27 from Wilton. What seemed unusually absurd that morning, however, was the fact that after two and a half weeks in the place, working days and nights, we still hadn't gotten around to having a phone put in. Peter Meyers, who would soon become head of the shipping department, was hastily dispatched to the pay phone across the street to order one.

Peter relayed the particulars concerning the listing and was about to hang up when the woman at the other end realized she had not gotten the name of the business. Peter paused. He looked out over the town green to the rusty cannon and inscription "dale", then back across the street to the old train station. "Um, why, Cannondale Corporation," he said.

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PHOTO CREDITS

pg 3 Tom Limp  
pg 18 Barry O'Rourke

The Cannondale Corporation manufactures sophisticated backpacking and bicycling equipment for the serious outdoorsman. Each product is designed to function better and last longer. The materials used have been chosen for long-term, high-stress performance, regardless of price. We unconditionally guarantee the workmanship and quality of our products through a nationwide dealer network.

Our Customer Service facility will be happy to repair and refurbish your Cannondale equipment (for other than manufacturing defects) at cost plus handling. Send the product back to us post-paid, and we'll complete the necessary work and bill you.

**Cannondale Corporation**  
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