

GEAR COMMENTARY

# Light Packs for Heavy Loads

by Ryan Jordan | [ryanjordan.com](http://ryanjordan.com)

# ABOUT THIS COMMENTARY

This commentary represents a reflection of my personal opinions about lightweight trekking packs for

*loads that matter*

i.e., loads in excess of twenty pounds, which, no matter how you slice it, is the minimum required weight for going deep into the backcountry for several days at a time and maximizing your engagement with wilderness. Hikers who carry loads of less than twenty pounds are typically weekend enthusiasts who may be passionate about ultralight gear, but otherwise unable to go on longer trips for different reasons.

The opinions expressed herein are solely my own and have not been purchased, extorted, traded for advertising, or otherwise offered in exchange for unscrupulous bribes.

This commentary is a live document that is evolving continuously and reflects only those areas of equipment that I am currently, and very actively, studying.

Therefore:

- It's not comprehensive;
- It's not necessarily reflective of my past choices; and
- It's not intended to be a stone-written treatise that places a stamp of approval on something only to have it benchmarked in a few months.

To that end, some of the gear featured herein will be new, innovative, or in a prototype phase; some will represent tried and true pieces of kit that I've been using con-

tinously for years; and some may very well reflect the whims and fancies of my current tastes.

## ABOUT RYAN

I am the Founder and CEO of Backpacking Light ([backpackinglight.com](http://backpackinglight.com)) and author of the blog “Explore Your Wild Side” at [ryanjordan.com](http://ryanjordan.com), which provides inspirational content about wilderness trekking, packrafting, tenkara fly fishing, and personal development.

I offer guiding services, online course instruction, field courses, personal mentoring services, consulting, and paid subscription newsletters. Please visit [ryanjordan.com](http://ryanjordan.com) and have a peek.

## CONTEXT

I am currently studying packs (who isn't?). Part of the reason for this is that Backpacking Light is reworking its comprehensive state of the market reports on both frameless and internal frame packs, part of the reason is that I recently sold more than two dozen packs out of my personal collection because they've not met up to my expectations, part of the reason is that I'm disappointed in the complexity of recent pack designs of my own that I've brought to market in the past few years, part of the reason is that I'm in the process of designing a new pack, part of the reason is that I've returned to using my McHale packs more often, part of the reason is that I've been experimenting with the performance of new packs in the cottage industry (which leave me wanting), and part of the reason is that I'm bored with the lack of innovation coming out of the pack manufacturers that once injected so much energy into our cottage industry.

Gossamer Gear, Six Moon Designs, and Mountain Laurel Designs still haven't released a pack suitable for carrying loads in excess of 30 pounds with any degree of

comfort, and ULA Equipment hasn't been able to introduce one that doesn't absorb *pounds* of water when it gets very wet. There are old players in this market (McHale) and newer ones (Laufbursche, Hyperlite Mountain Gear, Zpacks, and others) that remain nimble enough to fill a desperately needed niche, and established pack makers (Osprey comes to mind) that have the distribution mechanisms and production pipelines in place to really bring good fruit to this market.

## THRU-HIKER SYNDROME

The reason that most ultralight cottage manufacturers don't design to weights in excess of 30 pounds is simple, but not often disclosed.

It's called *Thru-Hiker Syndrome*.

It seems that companies *love* testimonies from thru-hikers. After all, isn't a hiker who walks 20 or 30 miles a day, for months at a time, down a trail that extends for 2,000 or more miles, capable of offering the best possible qualified testimony?

This, of course, is sort of like asking for a Christian testimony from a middle-class pastor's kid.

I think I'd rather hear a testimony about Jesus from a former crack addict.

You see, here's the problem with thru-hiker testimonials.

First, by the time they are several hundred miles down the trail, they are not only exceptionally fit, but they are exceptionally tolerant of things like poor pack fit and carrying a little extra weight. This is why the famous thru-hiker evangelists at Neel's Gap, Georgia have a successful business only a few days from the start of the Appalachian Trail, rather than a few months. It's easy to sell gear when the wounds of pain are the freshest.

Second, thru-hikers (at least, the PCT/CDT/AT variety) almost never carry more than five or six days of food at a time. Consequently, assuming they've done at least a little bit of homework and have reasonably light base pack weights, the chance that they will have to suffer with a 30 or 35 pound load for more than a day or two is pretty slim, and usually, they just write it off as “resupply discomfort” rather than admit that the pack is incapable of carrying that sort of load in comfort.

Andrew Skurka recently walked 4,500 miles through the most remote wilderness in the world – Canada and the Yukon – and the only time he carried a load in excess of 45 pounds was when he left Fort McPherson with two weeks of food towards a cache in ANWR. I would have had to carry 55 pounds to cover the same distance, because Andrew walks faster than me, and recovers better. Andrew's not your normal thru-hiker of course. This just illustrates that long trips with heavier loads are more likely undertaken by normal people than by über-athletes on long distance walks. The last time I planned a circumnavigation of the Wind Rivers with a thru-hiking friend, we crafted a route that was 216 miles in length and estimated that it would take 11 days to complete. He asked me where we were going to resupply...I had to remind him that we weren't. After mumbling about having to carry too much weight in his homemade Ray-Way pack, he no longer became interested in the trip.

Finally, and I say this in jest (well, partly in jest!) - by the time a thru-hiker has spent several weeks on the trail, I think they are just so excited to be unplugged from society and its hordes of people who complain about everything that a little bit of discomfort here and there is really no big deal. I know I've experienced this on all of my long treks.

This type of irritation (i.e., that of load weight placing strain on the upper body muscles of us non-über-athletes) affects different people to different degrees. As an engineer, and knowing what good design is capable of, it irritates me to no end. By now, in what is a very mature market, there is simply no excuse for a pack to be uncomfortable with a twenty or thirty pound load.

Unfortunately, the vast majority of cottage manufacturers that are manufacturing “ultralight” packs seem to be waging wars fought on postal scales rather than sound design.

# WILLFULL SUFFERING ON LONG TREKS

Now don't get me wrong.

I've done long trips with light packs. I've even done long trips with heavy loads and light packs. *And*, I've done long trips with heavy loads using packs that were *too* light to comfortably carry that heavy load.

And I can justify doing it again. Here's how.

I'll do it again because I don't mind suffering for a day or two or three with a heavy load until (a) the pack load becomes light enough that the pack can handle it, (b) my shoulders adapt to the pack's crappy load transfer capabilities, and (c) I'll spend *most* of my trail miles hiking with a pack that is *comfortable enough*.

In 2006, I left Kotzebue with 56 pounds on my back (mostly food) for a 600 mile trek across the Arctic, and carried it in a pack that was comfortable for loads of 40 pounds or less. In other words, I made the conscious choice that I was willing to suffer for the first 9 days.

Demetri Coupounas' (CEO and co-Founder of GoLite) approach to this problem is to pack everything in a frameless pack because “sixty pounds is sixty pounds any way you look at it and most of the effort is borne by lifting the weight over and again with your legs” - so you may as well carry a light frameless pack.

Coup's approach is extremely pragmatic, mathematically provable (caveat: with a simple enough model that may assume too much), and based primarily on the design principles of the GoLite Gust (and later, the Pinnacle), huge-volume frameless packs that carry *large* and *heavy* loads exceptionally well – *relative to other frameless packs*, that is.

Ray Jardine of course made this concept popular in the 1990s. However, Jardine's claims of miraculous weight savings were made primarily in the context of the energy saved when comparing a one pound frameless pack to the standard of the time, an eight pound internal frame pack. If those were the only two options, I would be thinking long and hard about suffering through the frameless approach. But things are different today, and the lines of demarcation are more blurred, now that there are some fantastic load hauling packs that weigh in the two to four pound range.

Another friend of mine, Glen Van Peski (Founder of Gossamer Gear) might simply look at sixty pounds of gear and shorten his trek (or increase his daily mileage so he wouldn't have to carry an extra day of food!). Glen won't carry heavy packs. The packs of Gossamer Gear reflect this approach. Frameless packs and minimalist load carrying systems are targeted squarely towards those who carry light loads.

## LIGHT PACKS FOR HEAVY (AND LIGHT) LOADS

Other cottage manufacturers like Six Moon Designs and Mountain Laurel Design don't tackle the subject of “light packs for heavy loads” and they generally stay clear of marketing their minimalist designs for any sort of load carrying robustness.

In fact, Six Moon Designs squarely markets their packs as a function of pack-weight, rather than a function of function. On their pack index page (retrieved from <http://www.sixmoondesigns.com/packs.html> on April 11, 2011), the prospective customer is presented with a trio of choices and offered no information about their function, benefits, or target market. Only that they weigh either 15, 24, or 25 ounces. Welcome to the gram wars: buyer beware – be prepared to dig and research to fairly evaluate these packs.

To SMD's credit, their StarLite pack is an exceptional load carrier (\*as far as frameless packs go). When I was studying frameless packs for Backpacking Light by

looking at a frameless packs resistance to load collapse, the StarLite offered features that mitigate it to some extent, including a pad pocket that, when used with a reasonably stiff pad, provided good load transfer between shoulders and hips, and one of the better-designed hip-belt-to-pack transfer interfaces that I've seen in minimalist backpacks. It's one of perhaps only three packs in which I'd consider carrying a load heavier than twenty pounds for an extended length of time. The other two are the GoLite Pinnacle, and a McHale without its frame stays.

One differentiator in this group is ULA Equipment. Their frames are robust enough for decent loads, but their packs have become bloated with enough “features” through the years that they now have positioned their products closer to those of more mainstream pack manufacturers like Osprey and Granite Gear.

I contacted Brian Frankle, the Founder of ULA Equipment, to manufacture custom packs for Roman, Jason, and I for the Arctic 1000 Trek because I knew that Brian had the design expertise to develop a light pack for a heavy load that would allow us to suffer less.

Dan McHale would have something different to say. You see, Dan has a *seemingly* hostile intolerance for any pack load of meaningful weight (greater than 15 or 20 pounds) carried in a frameless pack. His rationale is that a solid internal frame, a nice wide hip belt and padded shoulder harness, combined with a custom fit, is the secret sauce behind carrying weight in backcountry comfort. He's also a stickler about pack fabrics. When I asked him to make me a pack using Cuben Fiber in 2006, he told me to do something that I can't print here, because the kids are reading, too.

I have carried 40+ pound loads in both frameless and internal frame packs from Gossamer Gear, Six Moon Designs, ULA Equipment, Mountain Laurel Designs, GoLite, McHale, and others.

The most comfortable 40 pound loads are always carried in the McHale.

My McHale packs also carry 30 pound loads more comfortably than the others.

My McHale packs also carry 20 pound loads more comfortably than the others.



Of course, carrying an ultralight load (12 pounds or less) in one of my little McHales is just fine too, and I honestly can't justify the irrationality that I invoke when I take anything else anymore. Emotion is a powerful thing, when it comes to choice, and it requires some discipline to keep it in check.

Dan's philosophy is that saving one or two pounds of pack weight (which usually amounts to less than 5 or 10% of your total pack weight, and far less when you consider your total gear + body weight) by carrying your load in pack with a minimalist suspension (and less durable fabrics) borders on idiocy.

In fact, Dan and Demetri are found at so opposite ends of the philosophy spectrum that there seems to be little room for cottage manufacturers to propose anything different, except to continue competing with their spec sheets and focusing on the weight of their packs in ounces.

My personal opinion is that I almost do not trust *anybody* who claims that their frameless pack can carry 15 or more pounds *more comfortably* than a pack with an internal frame.

The laws of physics prevent this possibility.

It's important for you to realize right now that Dan McHale doesn't have any secret sauce, so don't go to McHale thinking you're going to bite the magic bullet. He simply offers something nobody else does: a totally custom fit. That custom fit solves 90% of the problems having to do with load carrying.

# IGNORING EMOTION AND TAPPING INTO MATH AND PHYSICS

You see, an internal frame prevents collapse of the load, which causes strain on shoulders. The argument that a frameless pack aficionado will give you is that “I carry \_\_\_ lbs in my frameless pack all the time and have no shoulder pain!” Yeah, me too. I've been there. It's truthful stuff, but not universally applicable to all hikers, and especially, to those who hike infrequently and casually – and definitely not applicable to the weekend enthusiast who finds himself thrust into a situation where he has to hump heavy loads (35 or more pounds) for long miles (15+ miles per day) over the course of several days in a row during his once-a-year summer vacation trek.

Mathematical principles can be used to develop rudimentary models of energy expenditure that balance the additional energy required to carry an extra pound or two of weight in a backpack suspension vs. the energy saved by preventing load collapse and instability. These are not simple models, or simple discussions, and I'll save the discussion of them for another time.

However, after developing these models, studying their applicability and limitations, and validating them with my own experience, I tend to lean towards spending a pound on more durable fabrics (so that my packs last longer), more water resistant materials (so that my packs stay lighter in the rain, or while packrafting), soft but nimble harnesses (so the pack load moves with my body and doesn't fight it), and nice strong internal frame stays that prevent a heavy load from collapsing, and a light load from feeling like an annoying strain on every step.

# AN APOLOGY

As much as I desperately wanted to love little ultralight frameless packs like the Gossamer Gear G6 (Whisper), The Zpacks Blast 32, and the MLD Prophet, and although I still enjoy using these packs on short overnight treks with less than 10 pounds of gear, I think that their applicability to hard treks with meaningful loads (\* not thru-hikes, which is not to say that thru-hiking is not a worthy style) is limited to those who have a high tolerance for suffering, a minimal understanding (or willful ignorance) of the relationship between biomechanics, physics, and physiology, or simply want to make a statement in their photos and gear lists online. I know this, because I've been there.

And I apologize to you for not admitting this earlier.

# ENDORING INTERNAL FRAME PACKS FOR ULTRALIGHT HIKING

Am I endorsing internal frame packs for ultralight hiking?

Yes, I am – but not universally.

The main reason for not endorsing them universally is that I still think most “ultralight” internal frame packs being produced by the cottage industry lack sound design and engineering principles. For the most part, it seems that “frame stays” have been added as options, afterthoughts, or annoying extras that can be removed by “serious hikers”.

Do I think the McHale provides the Ultima Thule in lightweight packs?

No – far from it.

McHale's limitations of course, are expense (a barrier that is easy enough to overcome, if you simply stop buying crappy gear that doesn't work), packs that are heavier than they need to be (because of fabrics and materials that absorb a fair amount of water), and prone to feature bloat (because of various options for the addition of modular pockets and doodads).

But what McHale offers is custom fit and excellent construction, which means that you will be getting a pack that can carry both light and heavy loads in comfort, that is going to last a very long time. I've heard people call them the “Ferrari” of packs. I liken them more to an old reliable Ford, back when they were still made in America.

## THERE'S A LOT OF ROOM LEFT

There remains plenty of room for innovation in the cottage industry, but few small manufacturers are taking advantage of it, and seem to have fallen asleep on Jardine's gunny sack laurels. While they nap, expert mass market pack manufacturers like Osprey, established cottage manufacturers like McHale, and new-on-the-scene risk takers like HMG are stealing their market share.

Gossamer Gear is inching slowly towards a happy medium with the Gorilla Pack but remains addicted to light fabrics that lack durability and a suspension system that puts the load too far away from the body's center of gravity. Six Moon designs keeps micro-modifying antiquated designs that will never carry a heavy load well because the suspensions place the load too low and too far away from the body's center of gravity, and offers frame stays as *add-on options* as if the core customer will always be carrying a 10 pound load as the rule rather than as the exception. However, both companies seem to be relying on promoting the loyalty of their existing tribes and preserving their product's unique selling propositions (differentiators) at the expense of exploring serious risks in product innovation. I think both companies have capabilities to leverage their experience, but are selling themselves short of their real potential. We'll keep waiting.

ULA Equipment is making packs that squarely fit the criteria of “light packs for heavy loads” but excessive features, old fabrics, commitment to green packs, and stale product lines aren't doing them any favors.

Mountain Laurel Designs is perhaps best positioned amongst the established manufacturers to launch a two pound pack that can carry a forty pound load, but with no meaningful experience in building packs with internal-framed suspensions designed for heavier loads, this will take time.

## WHAT I USE

For better or worse, you were probably waiting for this section.

Some of what I'll summarize here was alluded to earlier, but will be repeated here in case you scrolled down to this section without reading the rest of the commentary.

### **Summary of Packs That I'm Currently Used**

There will be no analysis here of frameless packs because they're all uncomfortable when loaded with 20 pounds or more. The *one* exception is the GoLite Pinnacle. It fits well, has enough padding, doesn't collapse badly under weight, and has a nearly perfect hip-belt-lumbar load transfer mechanism – for a frameless pack.

My favorite scenario for carrying the Pinnacle is a short winter trip where I'm carrying a bulky down sleeping bag, bulky down parka, a winter cook kit big enough to melt lots of snow and boil lots of water, and a roomy pyramid shelter.

The other pack I use the most is a custom built pack by Hyperlite Mountain Gear that will eventually be sold and marketed as a “big pack”. Mine is expedition sized – about 80 liters, but compressible to about 40 liters easily enough. It weighs just a shade over two pounds and carries 45 pound loads rather well.

For packrafting, I'm still using what I think is the best on the market – a ULA Arctic Pack, a collaboration project between Backpacking Light and ULA Equipment from 2006-2008. I think it's a pretty good pack that carries 40 pounds OK, but becomes pretty strained at heavier weights. I've not tried the new version of this pack, the ULA Epic, but underground reports indicate that not much has changed. Unfortunately, I'm burning through my stash of Arctic Packs quickly. Like most packs from cottage manufacturers, they can last an entire thru-hike carrying 25 pounds, but when the repeated strain of 40 or 50 pound loads is put on them (my normal pack weigh for a packrafting trek of 2-3 weeks), seams start to rip. To address this, I'm working on a new project to create an exceptionally durable packrafting rig that can carry a heavy load well.

## RECOMMENDATIONS

Explore your options, keep an open mind, and be smart (not emotional) about carrying your loads.

We will get closer to an Ultima Thule, but the cottage industry is still a long ways away.

Here's what to look for in an ultralight pack that can comfortably carry a decent load.

1. Ignore just about any pack that weighs less than 16 ounces, frame or not. The reason is that in order to achieve this weight, the pack has to be so small that it will be impractical for carrying meaningful amounts of food, and/or it will be manufactured with fabrics that are so light that it won't have the seam strength to be durable enough to support a decent load for a long period of time. If a pack is hovering in this weight range and has a frame, be very wary. *Something* is missing.

2. Don't underestimate the importance of a well-padded harness (and don't think that socks stuffed into the straps and belt are going to cut the mustard). Well-padded and wide shoulder straps and a hip belt, along with a padded lumbar area, go a long ways at effectively distributing a heavy load. Ultra-light packs will be made with lightweight foams, and packs capable of carrying heavier loads may at least have a dual density foam hip belt, which helps prevent collapse of the belt without it being too wide, or requiring two buckles.
3. Pay attention to a pack's compression system, and in particular, look at how the compression system deforms the back panel of the pack when it is cinched tight. The best defense against back panel deformation is either a semi-rigid framesheet, or a compression system where the force vectors are tied into the frame stays directly. Unfortunately, few designers consider how compression impacts load carrying comfort and instead, consider it as an afterthought.

Are there packs that meet all of these three criteria, weigh less than two pounds, and can comfortably carry a forty pound load?

No.

And if you'd like to debate that answer, I'd be happy to do it. Just drop me a note at [ryan@ryanjordan.com](mailto:ryan@ryanjordan.com).

Good luck and Godspeed,  
Ryan Jordan  
Bozeman, Montana  
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