

# Lighter-Weight Tripods for Travel: A Suitability Survey

by Robert Segal

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This is a work in progress. Please e-mail me with any questions or comments: [robertsegal@juno.com](mailto:robertsegal@juno.com)  
The on-line version of this document is posted at <http://members.bellatlantic.net/~vze2gkrc/Tripod-Test.html>.

7 June 2002

- edited text for clarity
- added section 'Strategic Purchasing Philosophy'

**News Flash: 5 June 2002**

- Gitzo have just implemented a major price drop on their line of tripods; table is updated to reflect new B&H pricing

Also 5 June 2002:

- added Gitzo 1001
- updated table to reflect new (2002) Gitzo literature; many specs have changed on the models shown; some changes are significant (1/4-pound, 2-inch variations)

4 June 2002

- corrected spelling of Velbon MAXi343E
- corrected PH-157 ballhead noted with Velbon MAXi343E to read PH-243
- added Bogen Digi 719B
- added Sunpak 3300 Pro
- added Benbo Mini Trekker
- corrected name of Velbon EFL-4
- performed major reformatting of table
- revised text

When considering a tripod for light travel, most photographers look for a compact, lightweight model, fairly sturdy (although this is always a compromise with small tripods), and of a reasonable height. Many users prefer not to extend a center column because of the attendant loss of rigidity. Those on the move may have a favorite type of locking mechanism to aid set-up speed or reduce snagging in branches. In addition, most users prefer to attach a third-party head to their tripods, rather than make do with the often-poor quality heads found on some lightweight models.

The primary applications considered in this survey were backpacking and vacation travel by air using carry-on bags, with an emphasis on *mobility* and *ease of use*. Although I have done only a little hiking, my air traveling and on-foot touring experience with many different bags and packs has shown me a 22-inch collapsed tripod is too big to fit within a typical rucksack or carry-on bag. Travelers whose *primary purpose* is photography are likely to tote more gear and may strap a tripod outside their packs. Acceptable tripods for strap-on carrying will vary widely by user endurance and type of pack, so I have intentionally not evaluated tripods for that mode. Even so, this collected information should help those interested in larger tripods.

Another common choice of determined light travelers is to use smaller, more unwieldy tripods with an eye toward maximum weight reduction. My days of high-exertion, sweaty travel in rugged or disposable clothing are pretty much behind me, so I sought tripods that would not require one to lie on the ground, jam the feet of the device into one's chest, or otherwise muss one's linen blazer as one takes a photo of Il Campo in Siena in the twilight before a nice Tuscan meal. Bending is okay; kneeling is out. You will not, therefore, find "tabletop" or miniature tripods in my list.

I am, by the way, medium build (5'-8", 155 pounds) with a rather high tolerance for painful, daylong loads. Even so, this table rejects 4-pound tripods.

With these characteristics in mind, I made several trips to B&H (for whose help I am truly grateful), tested tripods, acquired manufacturers' literature, and assembled the table you find here. I included the models that come up most often in discussions, particularly on *www.Photo.Net*, although several can be immediately disqualified for one reason or another. The column headings are

## Price

the B&H price in U.S. Dollars for this legset, including any manufacturer's add-ons (heads, straps, bags, etc.); xxx-D = discontinued at B&H (the price shown was as of March 1998) but may be available used or from another source [NOTE: Around early June 2002, Gitzo

implemented a major price cut on their line of tripods. The new, reduced prices are reflected in the table.]

<b>Matl</b>	principle material of construction; Al = aluminum, CF = carbon fiber
<b>Sgmts</b>	number of leg segments
<b>Locks</b>	type of segment locks (flip levers, wing screws, collets, or pop-fit with spring-loaded ball bearings)
<b>Low to Gnd</b>	does tripod splay its legs to go low to the ground? (Gitzo label such models "Performance" tripods as opposed to "Standard.")
<b>Stud / Head</b>	stud size: either 3/8"- 16 tpi or 1/4"- 20 tpi (or both sizes available), or type of built-on head (as appropriate)
<b>Height (Up / Dn)</b>	maximum height with center column fully up / center column down, in inches
<b>Clpsd</b>	collapsed length, in inches
<b>Wt</b>	weight of tripod as sold, in pounds; this may include a head if provided by the manufacturer
<b>Load</b>	rated load-bearing capacity, in pounds
<b>Features / Characteristics</b>	material considerations germane to use in light travel

Not all manufacturers provide all data. Values shown are from the manufacturers' literature unless underlined, in which case they are my best measurements of a B&H display model. Some of the data have been converted from metric units. If a tripod comes with a removable head, the height/length dimensions shown are my measurements with the head removed, but the weight is still the manufacturer's spec for the full kit. (Sorry, I had no scale with me at B&H.)

**Characteristics in red** are those I judged disqualifying for light travel, as defined above (e.g. too short, too heavy, not sufficiently compact when folded). My cut-off numbers are as follows:

- If it's 22" or longer, collapsed, **that's too long** and unlikely to fit in a carry-on bag.
- If it's 20" or shorter, collapsed, it's in **blue** as a winner.
- If it weighs more than 3-1/2 pounds, **that's too much**.
- If it weighs 3 pounds or less, it's in **blue** as a winner.
- If it doesn't reach at least 43" in height with its column down, **that's too short**.
- If it's 46" or taller with its column down, it's in **blue** as a winner. I don't really care how much height columns can add as I avoid using them.

Some other drawbacks are also noted in red but they aren't necessarily disqualifiers. What constitutes "unacceptably expensive" is, of course, up to you.

Why 43 and 46 inches? Why any of these completely arbitrary numbers? Designers struggling with the real world must sometimes narrowly target products for a median audience. I've had to design this way on occasion. At my height, you get a good appreciation for the middle, so while I still have to stoop for a 46" tripod, which reaches to my solar plexus, this seems a comfortable minimum height. You might prefer a different minimum height. You might not mind raising a column. Either way, the numbers you need to make your decision are in the table. Also, there's more to talk about here than just numbers and these cut-off specs help limit the discussion to the most suitable models. My apologies if I've neglected your particular favorite.

If a tripod has no drawbacks (or very minor ones), it's in **blue shading as a winner**. Runners up, with only minor disqualifications, are **shaded in green**. For those of you printing the table in black and white, I put the winners in italics, as well.

Hakuba distributes products for Velbon as well as under their own name. Manfrotto in the rest of the world is Bogen in the United States with different model numbers. Bogen also distributes Gitzo in this country. Gitzo's literature (sometimes) omits the initial "1" from the model numbers of their Series 00 and Series 1 products but B&H and other stores seem to use the four-digit Gitzo numbers in the chart, below. Don't ask me why. No Bilora, Davis & Sanford, or Tiltall tripods on display at B&H seemed worth considering for this project.

BOGEN		Price	Matl	Sgmts	Locks	Low to Gnd	Stud / Head	Height (Up / Dn)	Clpsd	Wt	Load	Features / Characteristics
3001BN	89	Al	3	wings	LTG	3/8"	57 / 45.75	20.75	3.7	11		
3001BD	106	Al	3	flip	LTG	3/8"	57 / 45.75	20.75	3.7	11		
3001BPRO	117	Al	3	flip	LTG	3/8"	57 / 46.75	22	4.2	11	horizontal column feature	
3405B	85	Al	4	collet	no	3-way	63 / 50.5	22	4.25	11	awful collets; weight includes head; alternate column with 3/8" stud available	
3444	428	CF	4	flip	LTG	3/8"	61.8 / 49.6	20.5	3.6	11	horizontal column feature	
3444D	335	CF	4	flip	LTG	3/8"	61.8 / 48.4	19.2	3.6	11		
3443	419	CF	3	flip	LTG	3/8"	67.7 / 51.1	24.4	3.5	13.2	horizontal column feature	
3443D	313	CF	3	flip	LTG	3/8"	67.7 / 51.2	22.8	3.5	13.2		
3445	448	CF	3	flip	LTG	3/8"	n/a / 51.6	23.2	3.74	13.2	3443D for video w/ bowl leveler (no column)	
Digi 719B	100	Al	4	flip	no	ballhead	64 / 51.25	20.5	3.7	8.8	wt. Includes small ballhead (not removable)	
BENBO		Price	Matl	Sgmts	Locks	Low to Gnd	Stud / Head	Height (Up / Dn)	Clpsd	Wt	Load	Features / Characteristics
Mini Trekker	80	Al	1	n/a	LTG	1/4"	28 / n/a	21.5	3.4	unk.	flexible, single-lever design but very short	
GITZO		Price	Matl	Sgmts	Locks	Low to Gnd	Stud / Head	Height (Up / Dn)	Clpsd	Wt	Load	Features / Characteristics
G1001	152	Al	3	collet	no	both	46.9 / 35.4	16.9	2	5.5	not low-to-ground	
G1026	234	Al	4	collet	LTG	both	48.8 / 38.2	16.1	2.2	5.5		
G1101	145-D	Al	3	collet	LTG	both	56.25 / 45	19.25	3	10		
G1106	150-D	Al	4	collet	LTG	both	53 / 36.63	13.88	2.75	10		
G1118	240	Al	3	collet	LTG	both	51.6 / 45.7	21.7	3.6	9.9	geared column	
G1120	204	Al	3	collet	LTG	both	60.2 / 46.5	22	3.5	9.9		
G1126	210	Al	4	collet	LTG	both	47.2 / 38.6	16.1	3	9.9		
G1127	387	CF	3	collet	LTG	both	59.4 / 50.8	23.2	2.7	9.9		
G1128	446	CF	4	collet	LTG	both	54.7 / 46.1	18.5	2.6	9.9		
G1201	189	Al	3	collet	LTG	both	60.63 / 47	22	4.25	13	discontinued by Gitzo but still avail. at B&H	
G1212	331	Al	3	collet	LTG	both	69.3 / 56.7	26	5.8	13.2	geared column	
G1220	264	Al	3	collet	LTG	both	61 / 47.2	23.2	4.9	13.2		
G1222	350-D	Al	4	collet	LTG	both	73.13 / 60.63	24	5.25	13		
G1224	278	Al	3	collet	LTG	both	71.3 / 57.1	27.2	5.5	13.2		
G1226	284	Al	4	collet	LTG	both	58.3 / 47.2	19.3	4.6	13.2		
G1227	440	CF	3	collet	LTG	both	63.4 / 54.7	25.6	3.4	17.6		
G1228	487	CF	4	collet	LTG	both	60.6 / 52	21.3	3.4	17.6		
G2220	207	Al	3	collet	LTG	both	64 / 49.8	25.2	5	13.2	'Explorer' w/ pivoting column	
G2227	458	CF	3	collet	LTG	3/8"	67.3 / 53.7	26.4	4.4	13.2	'Explorer' w/ pivoting column	
G2228	525	CF	4	collet	LTG	3/8"	64.5 / 56.5	22	4.4	13.2	'Explorer' w/ pivoting column	
HAKUBA		Price	Matl	Sgmts	Locks	Low to Gnd	Stud / Head	Height (Up / Dn)	Clpsd	Wt	Load	Features / Characteristics
Branner S5	45	Al	5	[note]	no	1/4" fem	44.75 / 38.75	11.5	1.79	5	1 flip lock + 4 pop-fit locks per leg	
HG-6230C	270	CF	3	collet	LTG	both	62.4 / 51.13	23.8	3.55	25		
HG-6240C	290	CF	4	collet	LTG	both	58.5 / 47.38	19.5	3.49	25		
SLIK		Price	Matl	Sgmts	Locks	Low to Gnd	Stud / Head	Height (Up / Dn)	Clpsd	Wt	Load	Features / Characteristics
CF 804	300	CF	4	collet	LTG	both	57.1 / 44.25	17.7	2.66	12		
Pro330DX	100	Al	3	flip	LTG	3-way	63 / 44.25	22.25	3.31	6.63	weight includes head & QR (see notes)	
Snapman Deluxe	100	Al	3	flip	no	ballhead	57.1 / 45.5	18	2.13	6.5	flimsy; weight includes head	

SUNPAK	Price	Matl	Sgmts	Locks	Low to Gnd	Stud / Head	Height (Up / Dn)	Clpsd	Wt	Load	Features / Characteristics
3300 Pro	80	Al	3	flip	LTG	3-way	63 / 44.25	22.25	3.31	6.63	same as Slik Pro330DX but in grey
VELBON	Price	Matl	Sgmts	Locks	Low to Gnd	Stud / Head	Height (Up / Dn)	Clpsd	Wt	Load	Features / Characteristics
Carmagne 630	399	CF	3	collet	LTG	both	63.4 / 53	22.8	3	25	
<b>Carmagne 640</b>	370	CF	4	collet	LTG	both	59.8 / 49	17.6	3	25	split column
<b>Chaser EL-3A</b>	58	Al	3	flip	no	1/4"	64.3 / 51.25	21.5	3.1	12	
Chaser EFL-3A	70	Al	3	flip	LTG	1/4"	62.2 / 41.25	22.1	3.1	12	split column
<b>Chaser EFL-4</b>	80	Al	4	flip	LTG	1/4"	56.7 / 46	16.9	3.2	12	split column
<b>Handy Chaser</b>	70-D	Al	4	flip	no	1/4"	49.8 / unk.	15.5	3.1	12	geared column; small 3-way head incl.
<b>Mountain Chaser</b>	117-D	Al	3	flip	LTG	1/4"	56.9 / unk.	17.8	3.7	12	split geared column; sm. 3-way head incl.
<b>MAXi343E</b>	60	Al	4	flip	no	1/4"	60.4 / 47.75	15.5	2	8	pretty flimsy; small PH-243 ballhead incl.
<b>Super Chaser</b>	55	Al	3	flip	no	1/4"	56.8 / 44.75	20	3.3	12	geared column

**Some extended comments:** You rarely see a factory-supplied head that can be swapped easily for a better one. I specifically looked for cheaply headed tripods I might decapitate with a hacksaw, insert a 3/8" bolt head-down (or, better yet, a Bogen 2934 Head Mounting Plate or Velbon ball head leveler), and cement it in with a big glob of epoxy, leaving a standard 3/8" stud. Despite my search, only two of the pre-headed cheapies were tall enough to be considered useful: **Slik's Snapman Deluxe** and their newer **Pro330DX** (also available for \$20 cheaper as the **Sunpak 3300 Pro**). Every other "inexpensive" tripod (the Hakuba Branner S5, for example) only came up to my waist.

Aside from saving over a pound of weight, there seems to be no reason to consider the Slik Snapman Deluxe over their Pro330DX. The Snapman Deluxe has the same number of leg segments (three), approximately the same height (right around 45"), and the exact same price (\$99.95) as the Pro330DX but the Pro330DX can go low to the ground, adds six more inches of column height, and has much better build quality.

Both tripods come with simple heads attached: The Snapman has a tiny ballhead and the Pro330DX has a better-built 3-way head topped with a pretty nice metal quick release clamp. (It comes with a matching plate, of course, but since the Q/R design seems to be proprietary, I'll pass.) If I were to keep their head, I'd make it more compact by replacing its two long operating rods with copies of its shorter wing nut, since they use the same thread. The best feature of the Pro330DX's head is it's held on by a hex key (Allen bolt) and can probably be removed to allow you to jerry-rig a 3/8" stud and mount your own choice of head. I'd love to dismantle one to investigate but I don't think B&H would let me get away with that without buying it.

In the end, however, both Sliks were blown out of the water by cheaper, sturdier options equipped with standard studs.

That **Hakuba Branner S5** also has a removable head, but the head holds the male part of the screw, so when the head is gone you're left with a 1/4"-20 female thread, a hole. I suppose it's easy enough to screw a Bogen brass double-male stud into that hole and leave a 3/8" male thread protruding. What's worrisome about the Branner S5 is its leg locks, the weakest on the chart. The uppermost locks are flip-types but the four segments below that lock with spring-loaded ball bearings that pop-fit into detents. You telescope the legs by pushing with enough force to collapse them. Enough force? Like the weight of a good sized camera, perhaps? That's why it's rated at only 5 pounds. What a stupid concept. I wouldn't trust it, especially down the road after wear and tear weaken the mechanism.

I'm usually a fan of the way Manfrotto/Bogen forgo subtlety for simplicity and strength but the **Bogen 3405B** has the worst leg lock collets designed by man; truly atrocious. They actually hurt to operate. The tripod is inexpensive but you can get better for less money. Its only up side is you can throw away the center column with its 3-way head and call Bogen to purchase either a replacement 3-faceted column with a stud or a "low angle adapter" for a 3001 or 3011 model. The replacements will fit fine but you should really consider this option only if you find a 3405 and a 3001 in the garbage together. Avoid the 3405.

A note about those **Bogen "low angle adapters"**: Although the Manfrotto/Bogen products here are mostly overweight, if you consider leaving their columns at home and using just the adapters, you can both trim that weight and shorten their collapsed



**Velbon Chaser EL-3A** longish (21.5") when collapsed, no low-to-ground ability, & only a 1/4" stud but really good height (51.25") -- and, at \$58, definitely worth considering

The remaining runners-up have good qualities but simply don't make sense for one reason or another:

**Bogen 3001BN** cheap (with wing nut locks) but no other outstanding positive characteristics

**Bogen 3001BD** like the 3001BN but with flip-lever locks; nothing remarkable to recommend it

**Gitzo 1118** not much additional height for its 21.7" length and 3.5-pound weight; stick with the EFL-4

**Gitzo 1120** not much additional height; too long (22") collapsed; stick with the EFL-4

**Hakuba HG-6240C** a bit overweight (3.55 pounds) with a 47.38" height for \$370; neither a bargain nor an engineering marvel

**Velbon Handy Chaser** discontinued; probably was a bit too short with column down but I can't be certain

**Velbon Mountain Chaser** discontinued; probably was a bit too short with column down but I can't be certain

**Velbon Super Chaser** a quarter-inch too short and just at the 20" limit for collapsed length; 1/4" stud; does not go low-to-ground

One last note: If you're tall enough to need height in the fifties and you can pack a 22.75" model, I'll cut you some slack and point out two additional units: The **Velbon Carmagne 630** and the **Manfrotto/Bogen 3443D**. Both these carbon fiber tripods are reasonable compromises. The Bogen is heavy-ish, at 3.5 pounds but the Velbon is just 3 pounds, exactly.

**Strategic Purchasing Philosophy:** I want to add something that's not about tripods so much as it's about life and the preservation of common sense. Since I'm doing all this writing about consumer choices, I want to take the opportunity to address some nagging flaws in the bigger picture, as when a man spends a mint on a camera body but when buying a tripod pinches pennies irrationally. Or perhaps his desires out-step his judgment and he spends foolishly for what he does not need. I made my selections, above, assuming a search for a second tripod for travel while leaving my large, primary legset at home. I would value my large tripod for its size and sturdiness but especially for its ability to hold my large lenses without vibration. No one should expect a stuff-it-in-your-bag vacation tripod to excel in those respects. The second, vacation tripod need only be as rigid and as tall as possible while strictly adhering to the limits for weight and compactness and also remaining functional (mobility and ease of use, as I said before) so it could fulfill its intended purpose: to travel. Philip Greenspun and friends have written lucidly about the philosophy of tripod purchases at <http://www.photo.net/equipment/tripods/>, and I highly recommend a visit to that discussion.

This is the **first step** in making a wise purchase: *identify your needs and decide what specific criteria will satisfy them*. The **second step** is to *assess your available resources* (set your budget). I've already done the **third step** for you: *explore what options the world offers*, then, **step four**: *take action* – and here's where I'm going to expound briefly on how to buy stuff in a market economy without perpetuating today's ubiquitous stupidity. This advice goes for every possible purchase: tripod, lens, stereo, house, car, college, what-have-you. The continuum of possible spending options divides into five categories, five ways to allocate resources, only two of which make any sense:

- 1 – deplete your resources for something beyond your reach
- 2 – obtain the best you can afford, emphasizing quality and suitability to purpose
- 3 – purchase neither the best available nor at the greatest savings; a celebration of mediocrity
- 4 – buy the minimum that will do the job, emphasizing conservation of resources
- 5 – get something too cheap to be of use

Between the extremes of self-destruction and waste, only options 2 and 4 are sensible. Do you want to conserve money or do you want the best possible tripod? If you insist on number 3, whimpering, "Well, I want to save *some* money but I want a *better* (i.e. chic French or carbon fiber) tripod," you either haven't sorted out your needs or you don't know your budget and you should be locked away until you get a clue about steps one and two. *Know thyself*.

This soapbox advisory is applicable to most of life so take it in the spirit in which it is offered. Perhaps your happiness depends upon impressing others with carbon fiber; perhaps your deficit spending is a wise route to the equipment you need to earn a better living. Even if the maxim "you get what you pay for," is true, as tends to be the case with tripods, everyone's needs and resources are unique. Just don't be stupid. Save the planet from Creeping Dumb. Think. That's all I ask.

**The Future:** There are other questions I seek to answer soon. I have to get to B&H early enough one AM for the floor manager to let me mount heads and cameras on these models. He has asked (very nicely - and I value my good relationship with their staff) that I not set up camp in the tripod display ranks during peak (lunch/weekend/pre-Sabbath) hours.

I use a T90 (Canon manual focus FD gear, and heavy) with a B1 ballhead. I'd like to do go/no-go performance tests to determine how well each tripod takes the B1/T90/and a 200/2.8. The idea is to see whether each model is stable enough to carry such equipment, even before we get to vibration issues. **ADDITIONALLY**, I expect such stability tests, alone, to give a *rough* indication of

- how well the tripod would take lighter or heavier loads, and
- how conservative the mfr's load ratings are.

I would also include sway/vibration tests (steadiness during exposure) and durability observations (display models at B&H live hard lives).

Those three areas: stability, vibration, and durability should complete my assessment.

My big quandary is how to do an **OBJECTIVE** analysis of vibration and sway. Any suggestions? I'm thinking of a tiny, sealed pan of water glued to a flash foot and mounted in the camera's hot shoe, and then subjectively judging its wiggle. An alternative would be a series of thin steel rods ("music wire") of varying lengths sticking into space from out of the hotshoe. I could set up for 'pitch,' 'yaw,' &c. and actually measure their wiggle against scales. Either test would mean nothing to other users (it would be irreproducible) but it would compare relative solidity of the models tested.

About the B1: That's a big head for some light tripods but it's sure-as-hell solid and won't introduce any further uncertainties as to where the wiggles come from. Again, by overloading some of the small models, I hope to extrapolate their suitability for less massive heads and cameras whilst keeping the tests consistent (apples-to-apples).

Again, I'm open to suggestions. Send me an e-mail, won't you?