SKIMO RACE GEAR GUIDE *https://tinyurl.com/SkimoRaceGearGuide*

Revised: November 3, 2022 (prepared by Jonathan Sheffz of NE Rando, yet intended to be neutral with regard to specific brands or retailers, regardless of sponsorship)

All Northeastern skimo races (and skimo-esque events) are open to whatever skinning setup you might already have: whether alpine touring, telemark, or splitboard.
Just affix full-length removable climbing skins to skis with full-length metal edges, put a helmet on your head, and you're good!

If that sounds good (enough), then no need to read any further.
Just be advised though that if you do show up with whatever skinning setup you already have, your first race might be the gateway drug to full-on skimo race gear. So read on in order to know what might await you!

Boots

As with any type of skiing, boots are the most important gear item for skimo racing.
Unfortunately, the skimo race boot model selection is extremely limited.
Even worse, skimo race boot availability at Northeast retailers ranges from extremely limited to entirely nonexistent.
(Don't worry, the other gear categories are more encouraging!)

For an utterly overwhelming exposition on the topic with an emphasis on full-carbon models:
www.tinyurl.com/StratosV
Otherwise, read on below for a (somewhat) more manageable summary, then return to the link above if you want even more.

And if the entire concept of ordering a boot sight-unseen (or rather, foot unclod by boot) strikes you as far too speculative, then seek out one of these many "near-race" lightweight touring models:
https://skimo.co/alpine-touring-boots
https://skimo.co/race-plus-touring-boots
… at your local brick & mortar retailer.
All of those models are not unreasonable (and perhaps even reasonable) to pair with a race ski.
(Anything heavier though is definitely unreasonable to pair with a race ski!)
You will though incur noticeable penalties of: more weight, no integration of the ski<>tour switch with the upper cuff closure (i.e., more transition fumbling), less rearward articulation in tour mode (pay no attention to marketing claims for range of motion, as they include meaningless measures for forward articulation), and more resistance in tour mode.

You can also try this feature:

https://skimo.co/boot-fitter

Keep in mind though for sizing that alpine boot half sizes – whether alpine downhill or alpine touring – are merely marketing fictions

(The sole – pun truly unintended, really! – exceptions are the 26.5 and 27.5 sizes from Pierre Gignoux, which is able to offer this since those boots are constructed by layering carbon fiber around an inexpensive wooden form, as opposed to injecting plastic into a capital-intensive mold that is cost-prohibitive to produce for 5mm length differentials).

Hence, pay close attention to where the shell "breaks" (the intentional type of break, not the warranty type of break) which varies among brands and even among models within the same brand (so check the Skimo Co individual model listings for boot sole length) thereby maximizing potential confusion (e.g., 27.5 and 28.0 could be the same size, or they could differ by an entire centimeter in length along with width adjustments if instead 28.0 and 28.5 are the same size).

Currently, a mere two skimo race boot models are available at any Northeast retailers:

https://www.gearx.com/dynafit-pdg-ski-boot

https://skithewhites.com/collections/alpine-touring-boots/products/dynafit-mezzalama-ski-boot-28-5

(If you know of any others, then please do tell asap!)

For a gear swap page local to the Northeast:

http://nerandorace.blogspot.com/p/gear-swap.html

Used skimo race boots in the Northeast also often turn up here:

https://www.facebook.com/groups/1481122478829758/

As for the entire universe of skimo race boot models, that can be divided up into three distinct categories based on materials.

For the cheapest, heaviest (relatively speaking), and softest, three all-plastic models are currently available:

https://skimo.co/dynafit-mezzalama-boot (replacing the discontinued PDG & PDG2)

https://www.sportiva.com/racetron.html (replacing the discontinued Syborg)

https://skimo.co/scarpa-alien-boot (replacing the identically named prior model)

For more money, lighter weights, and better skiing performance (generally comparable to many if not most "near-race" lightweight touring models), four models are currently available with plastic lower shells and carbon upper cuffs:

https://skimo.co/dynafit-dna-boot (replacing the discontinued Dy.N.A Evo)

https://skimo.co/la-sportiva-raceborg (discontinued yet still some availability)

https://skimo.co/scarpa-alien-1.0 (replacing the identically named prior model)

https://skimo.co/atomic-backland-ultimate-boots (softer reputation than the other others)
Except for the higher price tag, these models are better in all regards than all-plastic models. And in return for that higher price tag, you might be content to use one of these models for all your ski touring, thereby eliminating the need to own both skimo race boots and regular touring boots.

For even more money, almost impossibly lighter weights, more rearward articulation in tour mode than your own body possesses (i.e., sans you, some of these upper cuffs can flip back to become in line with the lower shell), less resistance in tour mode than some clothing (seriously), and shockingly stiff skiing performance (although despite being precise and supportive still not a "progressive" flex), only three companies are in the market:

https://pierregignoux.fr (pioneered the entire concept)
https://us.scarpa.com/alien-4-0 (succeeding the 3.0)
La Sportiva Stratos series (five generations so far)

The one major downside of all of these models is that boot shell modifications are truly utterly impossible. You can play around with boot liners and custom footbeds, but otherwise, the boot either fits you, or … it doesn't!
Therefore, the prior category of boots with a carbon upper cuff on a plastic lower shell is kind of a Goldilocks combo. And one Northeastern bootfitter: http://www.gmolfoot.com … has extensive experience with skimo race boot mods. Another: https://www.racestocksports.com/services/ … despite the focus on alpine race "plug" boots with massively thick shells that are designed to be literally ground out for all sorts of foot types, is willing to work on our thin shells.

For any bootfitter you visit, although nobody else can feel exactly what you are feeling in the boot:

- If a bootfitter tells you that the boot is too big for you, then it is too big for you. (If you think it's the right size, then unfortunately you're wrong, and the bootfitter is right – the old adage about how "the customer is always right" does not apply in this context.)

- If the bootfitter recommends custom footbeds, then buy them. Custom footbeds are not a magical panacea for 100% of fit problems, but they do solve what is probably a vast majority of fit problems. (And performing shell modifications without first stabilizing the foot via a custom footbed is almost always all wrong, as it's essentially trying to ameliorate symptoms without addressing the underlying cause.)

But if you are tempted to go all-in on full-carbon boots, to address the offerings from these three companies in reverse order …

The entry for La Sportiva lacks a link since the five generations of their full-carbon boots have usually seen exceedingly limited availability (even by the standards of carbon skimo race boot unobtaniumity). As described in (too much?) detail in the exposition referenced at the very beginning of this section, the latest incarnation, the Stratos V, is mind-blowingly awesome, but try finding one for sale to the U.S. in your size. (Seriously, go search right now and report back – only one single pair has ever been for sale to the public here!)

By contrast, the Scarpa Alien 4.0 has decent availability (same search challenge for your size, although best wishes with the European size translation), and you might be able to try on a fellow racer's boots (preferably pre-race for a pre-sweaty condition), especially at the many races in Colorado, but also out East. The 4.0 low shell is probably unchanged from its 3.0 predecessor, although the 4.0 Boa cable configuration has been redesigned to cinch lower-volume feet far more effectively.

Many Eastern racers have Pierre Gignoux ("PG") boots, which are available in three different models, although all share the same lower shell.
Therefore you have many opportunities to try on a pair at races … with the caveat that the lower shell switched to a more narrow last in recent years. However, since all PG boots are made to order, you can specify the older last, which flares more prominently in the forefoot, yet still fits a variety of foot shapes.
But from the time an order is placed to when the boot is eventually hand made and shipped, expect a couple months, or even longer. (Which means that if you try on a pair at a race, you're unlikely to receive a pair from PG until the race season is over!)
Note that PG is the only company that makes a true half size for 26.5 and 27.5 (as all other alpine boot half sizes – whether alpine downhill or alpine touring – are merely marketing fictions).

The direct-to-consumer PG prices (net of the European tax) are quite reasonable (for full-carbon anything). PG also maintains a comprehensive spare parts inventory, and can repair or replace any component, even a single lower shell or upper cuff. With maintenance and inspection to nip small problems in the bud before they become big problems, one pair of PG boots is now in perfectly fine condition at nearly 1.7 million earned vertical feet, plus some lift-served, along with many cumulative miles of punishing tromping around on Northeastern granite and PNW volcanic rock.
As an alternative to ordering directly from PG, Dynafit rebrands some PG models, which can be ordered immediately from U.S. and European etailers. (Just be warned that the boots are accompanied with a very clear disclaimer that any question or warranty issue must be sent directly to PG in France!)
Example here:

https://skimo.co/dynafit-rc1-pierre-gignoux

But this model:
https://skimo.co/dynafit-pintec-boots
… is compatible with only one binding model, which is incompatible with all other boots!

Also, one U.S. etailer often has in-stock inventory for one PG model:
https://cripplecreekbc.com/collections/alpine-touring-boots/products/pierre-gignoux-black-alpine-touring-boot

Last, but by no means least, no matter what boot you choose, this you must use:
https://www.amazon.com/dp/B000E59HXC
… as it almost magically prevents heel blisters! For maximum stick-um, apply the night before, then can adhere for multiple days of uphilling (yes, with showers in between). But take care to remove (preferable when wet), less you remove any of your skin in the process.

Skis

With the rare exceptions of models that are designed for Sprint races or uphill-only Vertical races (yes, a ski not made for … skiing!), these are all very similar, despite the many competing models, as each company is aiming toward the same goals.
A few companies offer two models, with one a bit less expensive in return for a bit more weight.

Lengths are clustered at and just above the 160cm ISMF minimum.
A few companies also offer 150cm+ lengths to meet the ISMF min for women, although many women use 160cm+ anyway.

All of these ski quite well on groomers, even if using them for extensive lift-served skiing probably isn't a good idea. Pretty good in bumps too, although longevity for that is uncertain – actually strike that, and change to almost certainly of a short duration.
Outside of races, for steep corn descents in the Presidentials in the spring or the PNW volcanoes in the summer, expect varying degrees of chatter and deflection depending on the firmness and smoothness of that corn. Powder, despite tip rocker, the narrow profile means you're in the powder, not on top of it. Breakable crust, let's move onto the next gear category …

(See, that was pretty easy! Aren't you glad you persevered through the boot section?)

Bindings

Full-on skimo race bindings:
https://skimo.co/race-bindings
… typically have no adjustability for release<>retention settings, boot length, or riser height. Also be forewarned that titanium heel "U" spring/spins are a consumable, as the "notching" from the steel boot heel interface will eventually make for a "rattly" ride. The notable exception is ATK, also rebranded by Hagan, which uses pivoting steel inserts at the end of an otherwise entirely titanium "U" spring/pin.

If some of that sounds somewhat intimidating, then some race models add some of those missing features at some relatively trivial weight penalties (with add-on adjustment plates for length available for almost all models).

If all of that sounds overwhelming overall, then you're right: as with skimo race skis, each company is aiming toward the same goals, yet achieving those goals with different designs, and emphasizing different attributes in the process.
You can also try this feature:
https://skimo.co/binding-finder
… which is especially helpful for matching your desired release value with the somewhat opaque release values of fixed-value skimo race binding models.

Alternatively, many of these touring models with a flap-style skin<>ski mode transition:
https://skimo.co/ski-mountaineering-bindings
… can be reasonably (or at least not unreasonably) paired with race skis.

Brakes are a recently added requirement for higher levels of international competition. Otherwise, retention device requirements vary by Northeastern venues.

Skins

Having used 100% mohair skins from Atomic, BD, CAMP, Contour, Dynafit, Hagan, Kohla, Pomoca, and Trab (rebranded Colltex), the definitive conclusion for grip and glide is … they're all very similar, with shockingly good glide compared to any full-width skin for regular ski touring, and grip that is (usually) adequate.

For an all-around race skin, choose a 59mm or 60mm width. For the occasional race ascents that are steeper, choose 62mm or 63mm. Or go wider than that with trim-to-fit (i.e., following the ski's sidecut, just like with a regular touring setup), rather than the usual straight-cut approach to

racing. One model: https://www.pomoca.com/skins/010-race-pro-grip … even emphasizes grip over glide, which is the exactly opposite of the usual race approach. In general, such steeper skintracks are more often found in races out West rather than the East.

You can also experiment with how far back to cut the skin. A rough guideline is to have about 10 to 12 inches of exposed base at the tail. (And yes, that's mixing metric and imperial units! But no, race skins don't have tail clips!)
One approach is to start off a pair of skins at max length for training, then cut them back shorter, thereby snipping off the very end at the tail where the glue will inevitably become contaminated. When you do start to lose stick-um at the tail and you can no longer just snip it away, you can try this little rejuvenation technique: https://www.wildsnow.com/5302/skin-glue-redo/ … before resorting to the effective yet toxic route:
https://www.blackdiamondequipment.com/en_US/product/gold-label-adhesive/

Glue formulations though vary more significantly among brands, but they all tend to be on the weaker side, so bring a back-up pair for races that are colder, wetter, or longer (with an emphasis on "or" as opposed to "and" as the combination of all three of those conditions would not make for a fun race).
Alternative silicon-based glue formulations are magical in almost all conditions, with easy handling (no "rats-nesting"!) and easy cleaning.
Unfortunately, that magical spell is broken in wet snow, upon which the glue fails without any chance at redemption.
So definitely a "quiver" skin rather than a "quiver-of-one" skin.

Among the overwhelming number of choices:

https://skimo.co/race-skins

… one option is that if you're willing to spend just a little quality time adding on a tip bungee (available for free from certain races) with this tool:

https://www.speedystitcher.com

… then you can buy 280cm for men's lengths (260cm for women's) off the roll quite inexpensively:

https://skimo.co/skin-rolls

Since race skins are a consumable, lasting less than a full season with frequent training on firm groomers, that also means that experimentation is easy, as your less-favorite models can be assigned to training duty. And since they're universally swappable among race skis, you can engage in endless comparison tests and ensuing hypoxic debates among your training partners.

Pack

All race pack models:
https://skimo.co/compare-race-packs
… allow you to affix your skis to your pack and then remove them without taking off your pack and then putting it back on – neat trick, for both racing and touring! (Or even just walking from your car.)

Most race pack models also have a side-access bottom compartment which allows access to many items in your pack without taking off your pack and putting it back on – once again, a neat trick in any context!

The typical 20-liter capacity is quite useful for below-treeline touring (i.e., no avy rescue gear or mountaineering "sharps") and makes for a nice off-season hiking pack too.

Helmet (and head coverings underneath a helmet)

Helmets targeted toward lift-served skiing tend to be far too hot for skinning.

Climbing helmets, by contrast, are light and cool, but may or may not offer protection that you may or may not consider adequate against side impacts from falling (i.e., as opposed to protection against objects falling on top of your head).
Climbing helmets also may or may not be compatible with ski goggles, although many racers just use sunglasses for both the up and the down, dealing with the drawbacks of sunglasses for the latter by – just dealing with it! (Somehow …)

Certification requirements vary by Northeastern venues, but dual-certification helmets:
https://skimo.co/compare-helmets
… that meet both the skiing and climbing/mountaineering standards are required for international competition and some Western venues.
Penalties for weight and warmth vary significantly by model.

For colder days, although headbands went out of fashion for alpine downhill skiing sometime around the 1990s (if they ever really were in fashion?), a thin lycra headband is perfect for protecting your ears from the chill of each descent while avoiding overheating on each ascent.
For even colder days, a ultra-thin "beanie"-style hat is perfect for underneath your helmet.
For even colder still, a hood on some lycra race wear models can fit underneath your helmet, thereby sealing up against heat loss from your neck very effectively, but such a feature is increasingly rare.

Clothing (other than head coverings underneath a helmet)

Race-specific lycra is a must for many skimo race boots as the integrated gaiters on the tights seal up the otherwise exposed gaps between the upper cuff and the lower shell's "bikini" liner. And wearing "wind briefs" underneath that lycra is a must for colder outings! (Any sort of tape on the outside of regular briefs will also work if necessary, even that found once while rummaging around the ski school customer service desk in an otherwise empty lodge during one particularly cold dawn patrol …)

Race-specific lycra is also quite practical for the convenient in-clothing stowage.
Since avy rescue gear is not currently required for any Northeastern venues, you can even get away with using your race pack at races only to carry your skis for the "bootpack" segments, and otherwise keep your pack entirely empty.

Two-piece race outfits add convenience for potty breaks, comfort for post-race socializing by removing your soaked top layers with fresh dry top layers (wicking materials are no match for our skimo-triggered sweat glands), and versatility for wearing just the bottom tights on backcountry ski tours that either too warm or too hot for a lycra top.
Two-piece outfits though also add cost, and perhaps weight (although even I haven't weighed these … yet), plus some tops of two-piece outfits can ride up annoyingly (although some snap together with the bottoms). So that means that one-piece outfits are still highly popular.

If you want to read even more about race-specific lycra:
https://skimo.co/skimo-race-suits

If wintertime lycra strikes you as excessive (or rather, insufficient), then many race or race-derived jackets:
https://skimo.co/compare-speed-jackets
https://skimo.co/compare-womens-speed-jackets
… offer the same stowage benefits, with excellent versatility for regular touring too, and sans skimo steeziness for socializing back in civilization.

As an additional race day layer, the ability to add some wind protection without removing your pack (or even stopping at all!) is a neat trick:
https://skimo.co/dynafit-dna-race-wind-jacket
https://skimo.co/camp-flash-competition-anorak
… as is adding some additional protection to your soft-shell gloves of choice without having to access your pack for traditional mittens:

https://skimo.co/backcountry-ski-gloves
… with specific models being frequently introduced (and then discontinued) for either soft-shell gloves that have integrated fold-out mitten-type coverings or overmits that allow your gloves fingers to poke through for transition dexterity.

Poles

Anything will work!
But you knew this section wouldn't stop at that.

A longer length will help for skinning, so a bit shorter than nordic classic racing length.
Or in more detail:
https://tinyurl.com/SkimoPoleLength
For skiing with such a nordic-esque length, just learn to deal with it (somehow).

Skimo-specific race pole models are typically carbon fiber nordic race shafts yet with more basic grips and straps, often the foam grips and basic loop-style straps found on trekking poles.
Unlike nordic race poles, that means that the length of such poles usually can't be shortened, as the grip can be removed only by destroying it, although you could just add on a new grip after cutting down the length.
(Interesting exception here: https://www.onewaysport.com/us_en/tr-carbon-race-3477 … even sold as a one-size 'kit" that must be cut to length, just like many nordic race poles, but then again, this is a skimo-specific race pole from a brand that specializes in nordic race poles.)
Skimo-specific baskets are wider than on a typical high-end nordic race pole.
And some sort of grippy zone is often added to the shaft below the grip for choking up during bootpacks.

Nordic race poles are relatively easy to modify on your own for all of these features, especially race models that come with a quick-release strap system (i.e., so as to facilitate your quick-turnover transitions).
The standard nordic race pole measures of grams per cm and deflection in mm matter far less for skimo racing, which lacks almost all of the pole-assisted propulsion emphasis of nordic racing, yet where durability is challenged even more by the metal of our ski edges and the pole-stomping potential of our transition zones. Often the Goldilocks model is the #3 pole in a brand's lineup, or whatever is marketed for the inevitable chaos of mass starts at high school xc skate races.

And whatever model you choose and no matter how careful your transitions, poles are still by far the most frequently broken gear at skimo races. So tossing an old back-up pair in your car is advisable.