

Wow

Hello, You've asked some deeply architectural questions, ones with numerous implications and variations, for forgive me if I ramble some here. First, let's call the inner stay the forestay, the inner sails the forestays'l, the outer stay the jibstay, and the outer sails the jibstays'l or Genoa, so we can be clear on which is which. The jibstay is opposed almost exclusively by the backstay, while the forestay is opposed to some extent by those aft-led intermediates, by the stiffness of the mast itself, a bit by the aft lower shrouds, and a bit, indirectly, by the backstay. The trouble is that none of these oppose the forestay very well, and that to the extent the backstay is involved it is losing some of its effectiveness in opposing the jibstay. Tuning the backstay sufficiently tightly (up to about 20% of rated break) can compensate for the extra load from the forestay, in part. But that locks you into keeping the forestay set up all the time, and really isn't optimal for either stay. Tightening the intermediates isn't much more help; as you noted the angle is so shallow that most of the work these wires accomplish is in adding compression to the mast. So the mast itself is called on to oppose the forward vector, which means you'll still have too much luff sag in a breeze, plus a mast shape that bulges forward at the height of the forestay, damaging mains'l shape. The root of the problem, I believe, is those damn aft-led intermediates. These have been promoted as labor-saving alternatives to running backstays, but they are just so much extra weight and windage, for all the work they do on most hulls. Unless the angles are as generous as possible, and the mast sufficiently stiff, and the forestays'l sufficiently small, they can't keep the forestay straight. And they prevent the main boom from swinging out as far as it might like, and they chafe the mains'l on a run. I do not like them. So, given a good mast section and appropriate wire sizes (your

forestay is smaller in diameter than your jibstay, right?) running backs are your answer. To avoid making them so difficult to use that aft-led intermediates start looking attractive, make them out of high-modulus (HM) rope instead of wire. The rope is much lighter than wire, so it doesn't whip around, fouling sails and crew. It's also softer, so kinder to your mains'l. Most runners have block-and-tackle for tensioning, but over the years I've come to the conclusion that this is not optimal; there simply isn't enough mechanical advantage to take any slack out of the forestay, so at best you can only keep the mast from bulging forward. Extra prebend can help here, using the mast for a larger component of forestay tension, but it ain't optimal. In addition, the blocks are a hassle to overhaul and take up, and they bang around on the leeward side, and it's difficult to set them low enough that they don't want to smack crewmembers in the head. That's why I now prefer, whenever possible, to take the runners to heavy-duty deck blocks, and then lead them to winches. If you have secondary winches, great, just make sure of a good lead. If you only have Genoa winches, use the leeward one for the runners. It can take a bit of choreography, but not much. And in extreme conditions you won't be using the Genoa at all, so the runners will own the winches. I'll stress that proper line and block selection, as well as layout and installation is vital to this system, as with everything in rigging. As for the halyard/forestay question, this is indeed being used on many boats, particularly in Europe. Vectran would be the best material, running over a sheave at least 8 times the diameter of the rope. You won't see anything like the fatigue that you get with wire in this application. Having said that, I think it's a bad idea. Even if you can get sufficiently large rope onto a sufficiently large sheave, you are still asking this piece of gear to do double duty. You're also asking your winch and/or cleat and/or stopper to be responsible for standing rigging loads. And when you drop the forestays'l, you have just removed a backup means of

keeping the mast out of the cockpit, should the jibstay fail. So I'm more for a forestay that is removable in light airs, but quick and easy to set up in a breeze. We usually use a Johnson adjuster with an Avibank pin. Hope this all helps. Lots of details left out, so feel free to follow up. Fair leads, Brion Toss