While it is often proposed that ocean eddies should be parameterized in terms of potential vorticity fluxes, no potential vorticity closure has been successfully implemented in an ocean general circulation model, largely due to the challenges of ensuring consistent angular momentum and energy budgets. Here we propose a new framework for parameterizing eddy potential vorticity fluxes, written as the divergence of an eddy stress tensor. This approach has a number of benefits: (i) angular momentum and energy are easily conserved; (ii) Gent and McWilliams is a limiting case in which the Reynolds stresses are neglected; (iii) a norm of the eddy stress tensor is bounded by the eddy energy; (iv) the remaining unknowns are each non-dimensional and bounded by unity in magnitude. The unknowns consist of anisotropy parameters and angles that quantify whether the eddies have preferred orientations in the vertical and horizontal; the angles are further related to the stability properties of the flow, the eddies extracting energy from the mean flow whenever they lean against the horizontal or vertical shear. A consequence of this approach is that the resultant eddy closures retain the functional form of the Eady growth rate. The eddy anisotropies and angles are diagnosed in a 3-layer, wind-driven, quasigeostrophic ocean model. The anisotropies are typically 0.1-0.5, suggesting the eddy energy imposes a strong constraint on the magnitude of the potential vorticity fluxes. A simple extension of Gent and McWilliams to incorporate up-gradient momentum transfer by Reynolds stresses will also be discussed.