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Tuning the Hall coefficient in single crystals of the heavy fermion compound $YbNi_2B_2C$ by annealing. PAUL CANFIELD, SERGEY BUD'KO, Ames Laboratory and Dept. of Physics, Iowa State University — We present temperature-dependent magneto-transport measurements on as-grown and annealed $YbNi_2B_2C$ single crystals. Annealing causes drastic changes in the Hall coefficient, $R_H(T)$. Whereas for as-grown samples the Hall coefficient is negative between room temperature and 2 K, with a pronounced *minimum* at $\approx$ 22 K, for the samples annealed at 950° C for 150 hours, $R_H(T)$ changes its sign twice in the same temperature range: from negative to positive on cooling below $\sim$ 100 K and back to negative below $\sim$ 10 K, and has a clear *maximum* at $\approx$ 45 K. Intermediate temperature dependencies can be achieved by reducing the annealing time. These findings are discussed within the framework of an annealing dependence of the skew scattering in conjunction with the recent structural, thermodynamic and transport studies of the effects of annealing in $YbNi_2B_2C$.

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