1023-11-1580 **Jason Worth Martin*** (jason.worth.martin@gmail.com), MSC 1911 (305 Roop Hall), Dept. of Mathematics and Statistics, James Madison University, Harrisonburg, VA 22807. *An improvement on the known bounds of discriminants of number fields.*

Given a number field, K, of degree n over the rationals, with discriminant d_K, and with r_1 real embeddings and r_2 pairs of complex embeddings, the root discriminant of K is $rd_K = \sqrt[n]{|d_K|}$. Putting $t = r_1/n$ we define $\alpha(t)$ as the limit infimum as the degree goes to infinity of the root discriminant of all number fields with $r_1/n = t$. In 1976 Odlyzko showed that, assuming GRH, $\alpha(t) \geq (44.7)^{1-t}(215.3)^t$. In 1978-79 Martinet produced examples showing $\alpha(0) < 92.3$ and $\alpha(1) < 1058.6$, and in 2000, Hajir and Maire extended Martinet's technique to produce examples showing $\alpha(0) < 82.2$ and $\alpha(1) < 954.3$. In this work, we give a mechanism for producing examples similar to Martinet's but for fields of mixed signature and use this method to produce upper bounds for $\alpha(t)$ with $t = 1/4, 1/3, 1/2, 3/5, 2/3, 5/7$, and 1. In particular we show $\alpha(3/5) < 342.42$ and $\alpha(1) < 913.50$, a significant improved over known bounds. (Received September 26, 2006)