It is sometimes useful to report the sample distances between the class means as an indication of the degree of separation between pairs of classes. These values are computed as

$$\hat{D}^2 = (\bar{x}_1 - \bar{x}_2)^T S_p^{-1} (\bar{x}_1 - \bar{x}_2) = \ell^T (\bar{x}_1 - \bar{x}_2) \qquad (7.24)$$