Correction of Field Errors in an RFQ, S. KOSCIELNIAK, TRIUMF, Vancouver, Canada - The most important effect of using a non-ideal vane geometry is that the longitudinal field can depart substantially from the value calculated from the usual analytic formulae; and this may lead to beam loss due to inadequate acceleration. An exact and self consistent procedure has been invented that may be applied to any practical vane geometry, to recalculate the vane profile parameters, modulation index (m) and minimum bore radius (a), so as to give the ideal acceleration and focusing field-coefficients at every RFQ cell. The procedure has two steps. First, make a numerical map, for each field coefficient, of the dependence on cell parameters m, a and cell length. Second, for given, desired fields at the synchronous particle, to invert the map numerically to find the required values of m and a. We have applied this technique to the ISAC RFQ design, assuming a constant transverse radius of curvature vane geometry, and performed particle tracking to calculate losses and emittance growth; which were found to be almost unchanged compared with values obtained if the ideal geometry is used. The disturbance caused by non-linear higher-order terms in the potential function is small: tracking showed the transverse emittance contours containing 95% of particles to grow by 10% as a result of halo formation.