**The PS 80 MHz Cavities**, D. GRIER, E. JENSEN, R. LOSITO, CERN; A.K. MITRA, TRIUMF - As part of the preparation of the PS as injector for LHC, two new 80 MHz cavities have been designed and built at CERN. Bunches spaced by 25 ns and less than 4 ns long are required at injection into SPS. The bunch spacing is obtained with a 40 MHz system installed in the PS last year, but the nominal small bunch length will only be obtained with the 80 MHz systems producing a total of 600 kV. These systems also have the capability to accelerate leptons in the PS, providing a total of 400 kV with high duty cycle (25%). The mechanical design is similar to that of the 40 MHz cavity with many common parts, but cooling water circuits had to be added. The cavity is equipped with an efficient, pneumatically operated, coaxial short-circuit. The power coupling loop has the form of a wide strip to minimize the ratio of self to mutual inductance. It has a DC insulation permitting multipactor suppression by a bias voltage. The final amplifier is mounted directly onto the cavity. A fast RF feedback with a loop gain of 44 dB reduces the Q to about 100. Higher order mode dampers designed and built at TRIUMF are implemented.