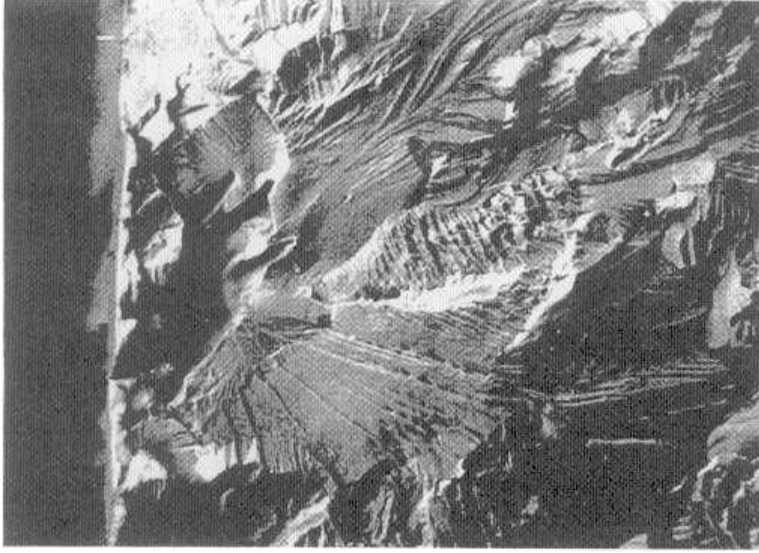


0.002 in.

1980 pedigree plate
Max. pore length = 0.013 in.



0.002 in.

1990 pedigree plate
Max. pore length = 0.006 in.

The figures show typical crack-initiating micropores linked to failure of smooth fatigue specimens taken from the T/2 location of 7050-T7451 thick (5.7 in.) plate representative of 1980 and 1990 commercial pedigrees. During this timeframe virtually all aluminum manufacturers had some effort in place to control porosity content in thick aerospace plate. Note that the material of lesser pedigree (left) had the larger failure initiating pore, and a correspondingly lower fatigue strength capability.

Figure 4: Microporosity has been consistently linked to fatigue limitations of thick 7050-T7451 plate.