The damage to copper crystals, produced by spark planing operations, has been measured using a dislocation etch pit technique. The tabulated results show the depth of damage to vary from 0.7 - 1.1 mm on the coarsest planing range used, to 0.2 - 0.3 mm on the finest range. Two photomicrographs showing the etch pit density increase near the spark planed surface are included. Key Words: copper, damage, dislocations, spark-erosion. in. Spark planing. Damage. In. Copper. John J. Gniewek, Alan F. Clark, and John C. Moulder. Cryogenics Division - NBS Institute for Materials Research. The damage to copper crystals, produced by spark planing operations, has been measured using a dislocation etch pit technique. The tabulated results show the depth of damage to vary from 0.7 - 1.1 mm on the coarsest planing range used, to 0.2 - 0.3 mm on the finest range. Two photomicrographs showing the etch pit density increase near the spark planed surface are included. Key Words: copper, damage, dislocations, spark-erosion. in. Spark planing. Damage. In. Copper. John J. Gniewek, Alan F. Clark, and John C. Moulder. Cryogenics Division - NBS Institute for Materials Research.