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Sommario/riassunto	An analytical study has been made to assess the loads developed on the horizontal tail of an autopilot-controlled rigid airplane flying in one-dimensional atmospheric turbulence. The root-mean-square values of rigid-airframe responses and tail-load responses were calculated at five flight conditions, and the behavior of these responses was observed in two autopilot modes: pitch-attitude-hold mode and altitude-control mode. It was found that pitch attitude and altitude can be controlled by the simple autopilot with acceptable or no increases in tail loads.