Human Error in Predator UAV Mishaps

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The use of unmanned air vehicles (UAVs) in military operations is expanding rapidly and this trend will likely continue given increases in funding for UAV development and acquisition from $3 billion in the 1990s to over $12 Billion for 2004-2009. High UAV mishap numbers in all military services led to multiple senior-level reviews of unmanned operations in the past few years, but even within common platforms, different analysts attributed these mishaps to differing causes. Sixty-four Air Force Predator Class A, B, and C mishaps occurred from the introduction of this system into the operational Air Force inventory in 1997 through the end of fiscal year 2006. Reports of these mishaps were reviewed to identify trends. Substantial changes over time were observed regarding mishap rates, mishap counts, causal factors, and impacts due to experience levels. Mishap rates across the past three years dropped to about one third the rate across earlier years. Mishap co*unts*, however, have steadily increased, as have Predator flying hours. Decision making, situation awareness, teamwork, and interface issues were the leading causal factors in earlier mishaps (1997-2003). In more recent years, problems in these areas were still frequently cited, but as contributing factors. Skill and knowledge issues (checklist error, task misprioritization, lack of training for task accomplished, and lack of system knowledge) emerged as the leading causal factors. These emerging trends come in a period characterized by a rapidly growing crew force. These data highlight the need to revisit both individual and team Predator training objectives and consider alternative training interventions that focus on the practice and improvement of these key operator skill areas. Implications for team coordination and situation awareness training are also addressed for the command and control personnel with whom Predator crews interact.