



# NASA Human Factors

# Dirty Dozen



The NASA Human Factors Dirty Dozen shows the 12 most commonly seen Human Factors in 2022.

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| <p><b>1 DECISION-MAKING ERRORS</b><br/>We make conscious decisions all the time, and when those decisions don't go as taught or intended, they can result in an unsafe situation (e.g., ignored caution or warning, inadequate risk assessment).</p> | <p><b>2 COMMUNICATION</b><br/>Information transfer breakdowns are involved in most all mishaps (e.g., inadequate briefing, risk assessment, miscommunication, failure to communicate critical information).</p>   | <p><b>3 ORGANIZATIONAL OPERATIONS</b><br/>Policies, processes and procedures are critical and need to be available, accurate, and consistent for successful operations (e.g., design reviews, flight readiness reviews, NPRs, audits).</p> | <p><b>4 TECHNOLOGICAL ENVIRONMENT</b><br/>Technology is an essential element of our mission. When technological tools fail to perform or underperform, it creates risks (e.g., communication equipment, warning system, switches and controls).</p> |
| <p><b>5 INADEQUATE SUPERVISION</b><br/>Supervisors who don't provide enough guidance and mentoring put their subordinates at greater risk (e.g., modeling, lack of feedback, training).</p>  | <p><b>6 SKILL-BASED ERRORS</b><br/>We perform routine patterns of behavior easily and unconsciously over time. These patterns are learned, and when they break down, it creates unsafe situations (e.g., procedural error, improper technique, checklist discipline).</p>   | <p><b>7 PLANNED INAPPROPRIATE OPERATIONS</b><br/>Supervisors who plan inappropriate work (but not a violation) put their colleagues and mission at greater risk (e.g., team or crew composition, pushing operational tempo).</p>           | <p><b>8 ORGANIZATIONAL RESOURCES</b><br/>Our organization provides tools to conduct business successfully (e.g., staffing, budget, equipment, facilities, technology, data systems).</p>  |
| <p><b>9 ADVERSE PSYCHOLOGICAL</b><br/>Mental states affect our interactions in ways that impact successful work operations (e.g., emotional state, personality, peer pressure, mental fatigue, motivation).</p>                                      | <p><b>10 VIOLATIONS</b><br/>Routine and workaround violations are tolerated by the organization when coworkers, supervisors, managers or leaders "look away" (e.g., driving over speed limit). Extreme violations are when one deliberately engages in behavior and knowingly violates rules (e.g., flying inverted).</p> | <p><b>11 ORGANIZATIONAL CULTURE / CLIMATE</b><br/>When the attitudes, values, beliefs, or morale of the people within an organization impact operations or operational risk.</p>   | <p><b>12 COGNITIVE FACTORS</b><br/>Attention management conditions affect an individual's performance and can create an unsafe environment (e.g., channelized attention, negative habit transfer, distraction, inattention).</p>                    |

The Dirty Dozen highlights the most frequently observed human-related issues discovered during Fiscal Year 2022 agency mishap and close-call investigations. Throughout the year, these issues contributed to \$3,310,298.74 in damage costs and 630 workdays of lost time.

Brought to you by the Office of Safety and Mission Assurance Human Factors Program.