

# FAA Aging Mechanical Systems Program

## Program Overview

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# Aging Mechanical Systems Background

- FAA has been mandated by congress to address Aging Systems
- Mandate includes both Electrical Systems and Mechanical Systems
- The FAA is in the initial stages of Mechanical Systems Research
- Chance to be proactive in Safety Research

# Objective

- The FAA's Aging Mechanical Systems program aims to develop technology and techniques to ensure the continued safe operation of aircraft mechanical systems.

# Current Research

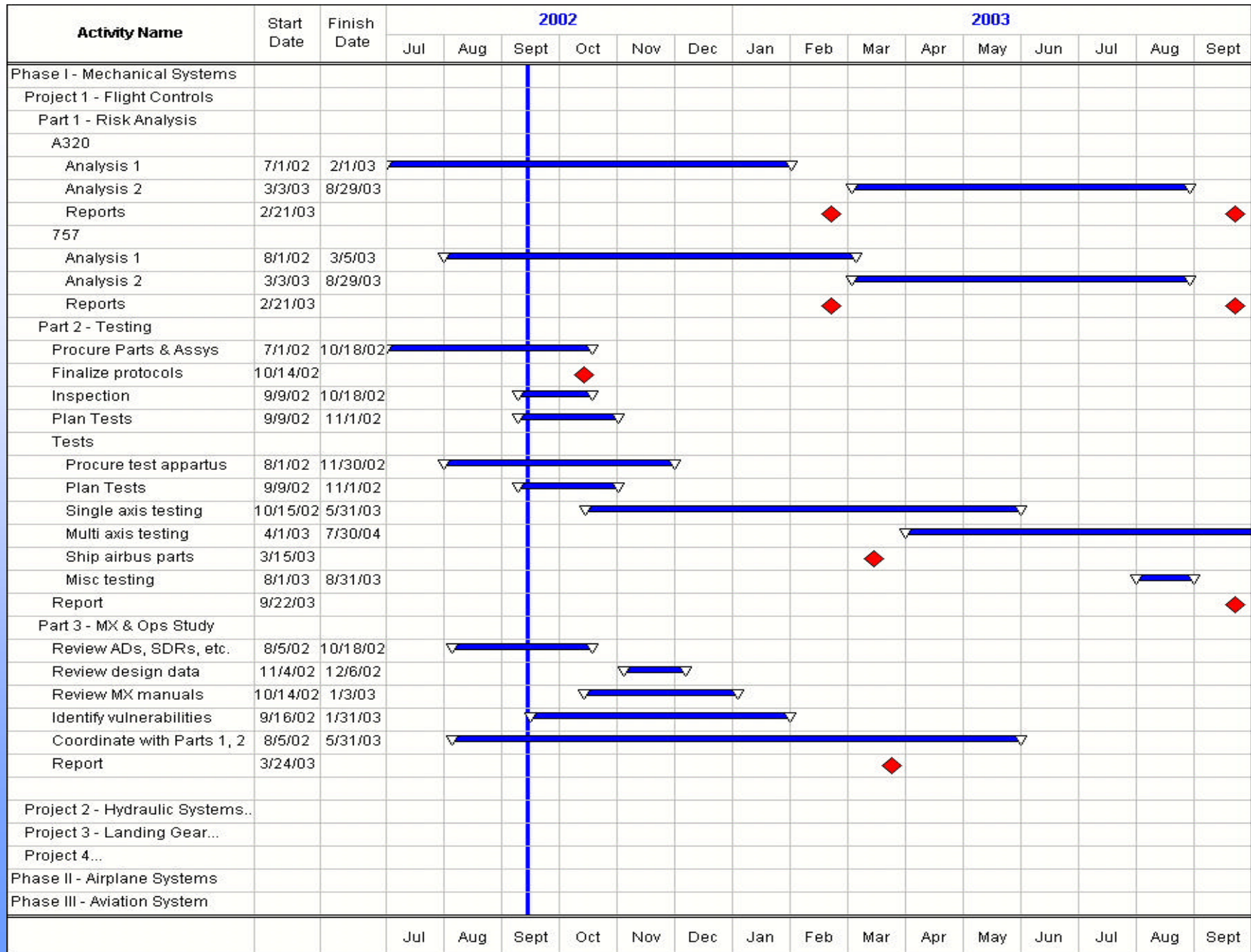
- Overall General Risk and Maintenance Assessment
- Destructive Testing of Flight Control Linkages
- Characterization of Test Bed Aircraft

# Overall General Risk and Maintenance Assessment

- Phase I: Flight Control Systems
- Phase I Project I: One axis of control systems on A320 and B757
  - Models are chosen to develop evaluation procedures
  - Partnering with Boeing , Airbus, and JAA
- Approach
  - Part 1; Assessment of the design and service history associated with this flight control.
  - Part 2; Assessment of manufacture's maintenance instructions associated with this flight controls.

# Destructive Testing of Flight Control Linkages

- Assess the condition of flight control linkages on aging aircraft
- Main effort Single Element Dual Load Path
- Possibly Single Element Single Load Path



# Characterization of Test Bed Aircraft

- To assist in the study of aging systems a test bed airplane (Boeing 747) is available to support investigations of mechanical systems and their relationship/interactions
- Assess which mechanical systems are functioning and to what extent.
- Determine what it will require to repair nonfunctioning systems.

# Future Research

- Additional mechanical systems to be addressed future phases
  - Hydraulics/pneumatics
  - Oxygen/environmental systems
  - Evacuation slides/doors
  - Landing gear
  - Ice and rain protection
  - Fire systems