JSC Crew Training Overview

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3 Phase Spaceflight Training Concept

Flight Controller & Astronaut Training Curriculum

**Generic**
- Content
  - Vehicle systems
  - Displays & Controls
  - Operational Concepts
  - Basic procedures
- Media
  - Classroom lessons
  - Training manuals
  - Computer and Web Based Training
  - Part-task training

**Flight Specific**
- Content
  - Skills-based Training
  - Nominal Operations
  - Malfunctions
  - System Interaction
- Media
  - Part-task training
  - Full fidelity simulation training
  - Standalone Simulations
  - Mockups

**BASIC**

**ADVANCED**

**Content**
- Team Training
- Flight specific training
- Nominal and malfunctions

**Media**
- Full fidelity simulation training
- Standalone Simulations
- Integrated simulations
- Mockups
Crew Training Approach

- The amount and depth of the Crew training is based on their assigned qualification level
- User
  - Utilize systems to safely live on ISS
- Operator
  - Nominal and maintenance tasks
  - Off-nominal with immediate safing
  - All User tasks
- Specialist
  - Off-nominal tasks with ground help
  - All Operator tasks
Training Facility Selection

- Systems Engineering Simulator
  - Rndz, Prox Ops, Robo
- Dynamic Skills Trainer
  - Robotics
- Virtual Reality Lab
  - Robo/EVA
- NBL
  - EVA, Robo
- Mockup Facilities (SVMF)
- Space Station Training Facility (SSTF)

Classroom, CBT

- Single System Part Task Training
- Flight Controller Part Task Trainers

Objectives/Complexity/Training Team Size

Fidelity

Cost to Operate
Flight Operations Directorate
NASA Johnson Space Center

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Online Training Library

ALL (68)
CREW (67)
FC & INSTRUCTOR (19)
TRAINING ACADEMY (10)
MSC, BRIEFINGS (50)

PROGRAM (ALL)
Part Task Trainers

- **PTT – Part Task Trainer**
  - Single System nominal and off nominal instruction
  - Procedure execution and display navigation skills

- **FCPTT – Flight Controller Part Task Trainer**
  - Multi-system, Integrated scenario training
  - Team coordination and communication in ‘mini-flight control room’
Space Station Training Facility

- Full scale, multi-system integrated scenarios
- Simulated crew and crew station mockups
- Full team coordination and communication in training Flight Control Rooms (FCRs)
Space Vehicle Mockup Facility

- Full scale ISS mockups
- Routine Ops / Day in the Life training
- Emergency response scenarios
- Payload racks and hardware training
Neutral Buoyancy Lab

- Full scale ISS mockups / Truss segments
- Extra-vehicular Activity (EVA) Training
- Commercial Crew / Orion recovery
Medical / Physical Training

[Images of training equipment and astronauts being trained]
Ellington Airfield Operations