***FLIGHT BRIEFINGS***

APPLICABILITY

These procedures apply to all Flight Test Technology (FTT) personnel supporting flight and ground test operations.

SCOPE

This section establishes FTT policy and procedure relative to flight mission briefing and debriefing. Maintenance of flight manuals, Flight Operations Limits (FOL), calculation and briefing of gross weight (GW)/center of gravity (CG), approval of flight cards and instructions to prepare the Test Conductor Summary are included.

FTT PROCEDURE

1) Flight Manuals

The Test Conductor will maintain the central repository for FTT flight manuals on his assigned program. He will receive from the Chief Test Conductor (CTC) current manuals and emergency procedures. He will maintain them by incorporating updates when received and will have them available for briefs, debriefs and flight operations.

2) Flight Operating Limits (FOL)

In addition to the Test Conductor responsibility relative to the promulgation of FOLs contained in the [company] Flight Operating Limitations for Contractor Programs, the Test Conductor is responsible for the following:

- Maintenance of a current set of FOLs for assigned program

- Understanding the limits (cause and effect) and action required to remove limit

- Providing the Aircraft Coordinator with FOL information. The Aircraft Coordinator

is responsible for the determination of test aircraft configuration defined by

Engineering Orders (EO), Flight Test Engineering Orders (FTEO), Aircraft Change

Directives (ACD), and other information available to him.

- Understanding the test aircraft configuration as provided by the Aircraft Coordinator

- Crew Briefing of the FOLs is the responsibility of the Test Conductor but may be

delegated to the Aircraft Coordinator by the Test Conductor

3) Gross Weight (GW), Center of Gravity (CG), Takeoff/Landing Speeds, Stall Speeds, and Load Factor (g) Calculations and Limits

The Test Conductor is responsible for the definition of store/CG configuration and receives requirements from the Project Engineer and Lead Analysts to provide that definition. The Weights Engineer defines ballast and store configuration to obtain the required configuration. The Aircraft Coordinator briefs the resulting configuration and the Test Conductor verifies the briefed configuration is within limits and meets test requirements. The Test Coordinator calculates all required speeds and load factors presented at the brief and consults with Loads and Performance Lead Analysts as to the calculation method of the required speeds and load factors.

4) Briefing and Debriefing Checklists

Technical Team Briefs will be conducted for all test operations, however, re-briefing following flight cancellation and re-scheduling is at the option of the Test Conductor. Technical Team Briefs will be held within 24 hours of the flight, however, Friday afternoon briefs for Monday AM flights are acceptable if a rebrief is conducted Monday prior to flight. The Technical Team Brief may be combined with the Aircrew Brief.

The Test Conductor calls and conducts the brief and the FTT Project Engineer, Crew, and all team members authorized by the Test Conductor to be in the ground stations during the test will attend. The Test Conductor will schedule Technical Team Briefs in the technical test team's work area that is suitable for the level of classification of the brief. The following Technical Team Brief Checklist may be modified by the Test Conductor for unique programs:

A. Technical Team Brief

1. Disseminate flight cards prior to the brief, whenever possible.

2. Verify required personnel are in attendance and that they have appropriate clearance and access to ATS (Automated Telemetry System).

3. Review Instrumentation C/D # and problem status.

4. Discussion of previous flight data concerns or problems.

5. A/C configuration and special concerns.

6. Review mission rules;

- Monitor plots and buildup techniques

- Criteria to change to backup flight cards

- Maneuver techniques and sequence

- Application program loading/ATS setup and personnel assignment . Define where in flight profile ATS configuration and/or personnel changes are

required.

- Abort criteria and technique

- ATS internal comm/external ground comm/aircraft comm procedure.

- Aircraft tape management

- Expected R, station man, and pilot man times

7. Review Flight Cards.

- Consistent with Program Goals

- Realistic based on past performance

- Valuable based on past performance

- Structured properly

- Switchology

- Expected results

8. Discussion and changes to the cards

B. Approval of Flight Cards

Approval of flight cards within FTT prior to the Aircrew Brief is required and is based on the following:

1. Flight cards meet test program objectives and the test conditions or profiles are required and satisfy program priorities. This approval is given by the FTT Project

Engineer or his designee.

2. Flight cards define safe flight conditions and meet technical objectives. The sequence of test conditions (buildup) are in safe increments, tests are at safe altitudes and attain desired technical objectives. Approval is given by the appropriate Group Manager or his designee.

One individual within each test team is authorized by the Director of FTT to be the designee of the FTT Project Engineer and the Group Manager to sign flight cards.

C. Aircrew Briefs

Aircrew Briefs will be conducted for all test operations, normally on the day of the planned operation. [Company document] requires the Aircrew Brief to be conducted within a 24 hour period prior to flight. The Program Test and Evaluation (T&E) Manager or his designee will brief aircraft status, configuration and maintenance records with the crew. The Test Conductor will review the flight cards and conduct of the flight with the crew. The

Instrumentation Engineer, FTT Project Engineer and Lead Discipline Engineers will attend Aircrew Briefing as required. [Company document] establishes chase and helicopter brief criteria and [company document] requires pilots of support aircraft to attend the Aircrew Brief. The Program T&E Manager will establish an area for Aircrew Briefing appropriate for the level of security of the planned brief. Test Conductors will prepare a Aircrew Brief

Checklist consistent with [company document]using the following as a guideline:

Aircrew Brief

1. Attendees: Aircraft Coordinator, Instrumentation Engineer, Test Conductor, Maintenance (As Reqd), Flight Crew, Tracker (As Reqd), Flight Safety, Campsite (As Reqd)

Support Aircraft Pilots (Chase, Target,Helo, Tanker etc As Reqd)

2. Aircraft Coordinator will address:

- Aircraft status and maintenance performed

- Aircraft configuration changes including software configuration

- Weight and Balance including store configuration, GW and CG.

- Minimum weather required and forecast weather

- Chase,target and tanker availability

- Assigned primary and backup comm assignments

- Flight Operating Limits (FOLs) for aircraft being tested (Repeat with each new pilot). FOL's pertinent to mission addressed by TC.

- Emergency of the Day

3. The Test Conductor will address:

- Weight and Balance for envelope expansion flights

- Ground Support Requirements (mirror, airsensor calib support, etc.)

- Range Support Requirements (ATS, EWTR, TM, Satellite, etc.)

- Routes and Range Airspace Utilization for Weapons System tests.

- Chase, target, tanker, photo, helo support requirements

- Flight Operating Limits (FOLs) unique to mission(Repeat with each new pilot)

- Review primary and alternate flight cards and profiles paying particular attention to description of maneuver or profile.

- Review ground cards

- Abort Criteria and voice comm techniques and phraseology to initiate abort

- Fuel Management

- Station, pilot,chase, target, etc. man times, takeoff times and rendezvous times.

4. The crew will cover:

- Local Area and Range Flight Procedures

- Formation/chase voice comm procedure and requirements

- Crew member requirements

- Flight Equipment/Egress

- Bingo fuel

- In‑Flight Refueling

- Divert Fields

D.Aircrew Debriefs

Aircrew Debriefs are required following the test. The following is a

general checklist to be modified by the Test Conductor for unique test

program requirements:

Aircrew Debrief

1 ) The pilot/flight crew will address;

- Aircraft crabs

- Unusual occurrences/anomalies

2) The Test Conductor will address:

- Conclusions from real time

- Instrumentation crabs that must be fixed or added for next flight

- Data constraints or required analysis for next flight

- Aircraft config changes for next flight

-‑Stores,CG,Hardware Software, etc

-‑Specific support such as target A/C, mirror,tanker, etc

3) The FTT Project Engineer or Test Conductor will address purpose of next flight.

4) The Aircraft Coordinator will estimate time and date of next flight.

E. Test Conductor Summary

The Test Conductor will prepare a TC Summary using the form shown below for dissemination immediately following the debrief.The TC Summary is prepared with information and data from the test and debrief, not post flight analysis. A description of each entry required on the form is shown in the TC Summary Entry Guide(shown beneath TC Summary below) and must be followed closely. The distribution for the TC Summary is:

- Director of T&E

- Deputy Director of T&E

- Director of T&E Program Management

- Director of FTT

- Cognizant Group Managers

- Program T&E Manager

- FTT Project Engineer

- Cognizant Instrumentation Data Engineer

- Chief Test Conductor

- Schedule Office

- Aircraft Coordinator

- Others outside T&E if approved by the Program T&E Manager or within T&E if approved by the Director of FTT

Test Conductor Summary

A/C\_\_\_\_\_\_\_\_\_\_\_\_\_ Flt No \_\_\_\_\_\_ Test Date \_\_\_\_\_\_\_\_\_Flt Time\_\_\_\_ Cum \_\_\_\_

Crew \_\_\_\_\_/ \_\_\_\_\_\_\_ Test Conductor\_\_\_\_\_\_\_\_\_\_

Plan Actual

Take Off \_\_\_\_\_ /\_\_\_\_\_\_\_ Landing\_\_\_\_\_\_\_\_\_\_ Fuel Remain \_\_\_\_\_\_\_\_\_\_

Accomplished Planned

Test Points\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_\_\_\_\_

Reason for T/O Delay

Configuration

Objectives

Results

Flight Discrepancies

Significant Occurrences

Purpose of Next Flight

Action Required Before Next Flight

Comments

TC Summary Entry Guide

The entry categories on this form and the order they are in is the only acceptable TC Summary format, however, the TC may vary the size of the entry space under each category. Any computing system may be used, however, TCs should consider compatibility of computing system output format with final report requirements ie. use FRED on the VAX or other suitable database systems.

All items in the heading are required and self explanatory except:

- Fuel Remaining‑ Required for envelope expansion testing only

- Test Points Accomplished/Planned‑ Used when test point

tracking is employed.

- Planned takeoff time is always the takeoff time listed on the

daily schedule

Reason For T/O Delay ‑ List items from the 3 categories below:

I ) T&E controlled items (Most Important) such as;

- FTT ‑ longer than planned briefs, support personnel conflicts with other programs, planning incomplete, etc

- Projects ‑ No clearance, schedule not achievable, chase/target not available etc

- Instrumentation ‑ Data system or mandatory parameters down, etc

- ATS (automated telemetry system) not ready or down, etc

- Aircrew not available/priority problems,etc

2) Aircraft was not ready at schedule time. Indicate when ready.

3) Weather or other causes

Example A) If takeoff planned at 1000 and actual was 1530

Reason for Late Takeoff‑ Wx delayed AM flight/aircraft ready ‑ at 1300/ ATS ready at 1445

Aircraft ready at 1430

Example B) If takeoff planned 1000 and actual 1100

Reason for late takeoff‑ Team and Crew Briefing required 2 hours vice 1 hour planned

Configuration‑ List most significant items such as:

- Software Load for Weapons Systems tests or Digital Flight Control System Test

- Store Configuration/CG for envelope expansion, performance or handling qualities

- Airframe, Engine or Systems Mods‑ such as "scoop on, ECS valve closed or New Fairing"(Show ECP, ACD or FTEO)

‑Note changes since last flight

Objectives ‑ List all such as;

- Profile #

- Area of envelope to be expanded

- System Functionals

- Aircraft performance, Loads, S&C etc

Results ‑ Remember this form is unclassified. Use this section for objectives completed or tested. Use real time data and crew comments where appropriate.

Flight Discrepancies ‑ List only two types of discrepancies

- Problems relating only to your testing such as " APN‑ 42 down" for systems test or "spoiler system disconnects" for envelope expansion or handling quality tests

- General comments concerning aircraft status or maintenance requirements such as; "pop stalls on Lt Eng" or "ECS continues to cycle"

Significant Occurrences ‑ Major events relating to safety or program status:

- Aircraft related such as "Lt Eng wound down during engagement‑normal restart‑pilot suspects fuel starvation" or "Chase reported smoke from rt eng nacelle‑flight abort".

- Support or Range related such as " Target no show‑reverted to backup objectives" or "ATS real time failed 20 min into flight‑flight aborted"

Purpose of Next Flight ‑ Enter "continue current objectives" or list next objectives. May be tied to the next category.

Action Required Before Next Flight ‑ Often one or more of these are required

- Layup for phase maint, seat insp etc

- Change stores to config A‑ 2AIM‑7 etc

- Engineering analysis (specify reqmt)

- Clearance from Navy

Comments ‑ This section should be used to pass information to management or document Range or T&E problem areas. If you can fix the problem yourself don't put it here, or you will receive the action.