



FLIGHT READINESS REVIEW (FRR)

GENERAL

The First Flight Readiness Review Board ensures:

- The test aircraft is flightworthy, properly instrumented, and conformed (if required).
 - Modifications done to drawings; instrumentation installed per drawings.
 - All Engineering Work Orders are completed.
 - QA has confirmed and conformed, if applicable.
 - Functional tests accomplished.
 - Airworthiness Certificate issued.
- Test Plan is complete.
- Test Report Content is agreed upon.
- Technical risks identified and Mitigation Plan in place.
- All other engineering test planning and safety reviews are complete.
- Test anomaly / reporting system is functional.
- All requirements documentation is complete.
- All design documentation is complete.
- Test or Validation Procedures are complete.
- All test certification or flight approvals have been obtained.
- Risk Management Program Fully Functioning.
 - All Hazard Risk Assessments have been accepted / approved at appropriate levels.
- Data Reduction Procedures and Responsibilities are documented and accepted.
- Data Analysis Procedures and Responsibilities are documented and accepted.
- Program Test Schedule established and fully resourced with support from organizations.
 - Maintenance
 - Instrumentation
 - Quality Assurance
 - Logistics
 - Equipment
 - Facilities
 - Staffing
 - Funding
- Progressive testing and test dependencies fully identified.
- Aircraft Quarantine Program for Conformed – Flight ready aircraft is in place.
- Produces an assessment “Checklist” to measure readiness.
 - **Green** - Tasks complete, ready to proceed;
 - **Yellow** - Some/all tasks incomplete but scheduled to be completed prior to first flight;
 - **Red** - Tasks not scheduled to be completed in time to support first flight;
 - This could result in either postponement of first flight and/or reduction in scope of effort until satisfactory completion.



Approval to proceed with active testing is contingent on completion of the FRR. The FRR is complete when the test plan is signed by the FRR Chairperson.

MEMBERSHIP

The FRR is normally chaired by the Flightworthiness Authority. In his/her absence, it can be delegated. Participants in an FRR are typically as follows:

Member Category	Member Title
Flightworthiness Authority	Senior Vice President, Product Engineering
Flight Test Authority	Flight Test Program Manager
Engineering Authority	Project Engineer (Co-Chairperson)
Aircraft Maintenance Authority	Experimental Shop Manager
Project Test Pilot	Project Test Pilot
Project PIC if required	Project PIC if required
Project FTE	Project FTE
Project Engineering	(as required to brief the status of their system)
Instrumentation	(if new or unique instrumentation)
Inspection	Quality Assurance
Configuration Management	Configuration Management
Ground Operations	(Flight Test Coordinator and secretary)



AGENDA

DESIGN REVIEW:

PRESENTER:

Construction

Engineering approvals for aircraft modification

Documentation of approved modifications

Analyses

Structural Analysis

- Design load Criteria Report
- Design Substantiation Report
- Structural Analysis Report

FHA / SA

Electrical load analysis
Aerodynamics (CFD, etc)

Installation

Provisions (internal)

Fit and function (external)

Conformity

AIRCRAFT READINESS

PRESENTER:

Maintenance

Records

Certificate of Airworthiness

Weight & balance

Emergency Equipment

Flight Test Installations - Equipment

Emergency Egress Provisions



Discrepancies / MEL

Quality Assurance Approval and release for flight.

Aircraft Quarantine Plan following release for flight.

PERSONNEL READINESS

PRESENTER:

Test Crews / Crew Duty Day Expiration Time: _____

Maintenance crews

Management / supervision

Emergency egress training

Equipment (flight suits / helmets / gloves / parachutes, boots, etc)

Parachute Repack Due: _____

INSTRUMENTATION

PRESENTER:

Installation

Functional Testing

Calibrations

Recording / cameras

EMI / RFI test results / issues

AIRFIELDS

PRESENTER:

Primary

Alternate

Emergency

TEST AREAS

PRESENTER:



FLIGHT TEST & SAFETY CONSULTANTS, LLC

Primary Area --- ATC Contact

Weather / Notams

RVSM Approval for test aircraft (non-RVSM approved aircraft)

Local TRACON phone # for RVSM coordination: See Table 1 & 2

TABLE 1 – TRACON PHONE NUMBERS FOR VIRGINIA OPERATIONS

AREA	TOLL FREE	LOCAL
Reagan National (DCA) and Andrews AFB (ADW)(<i>Mount Vernon Area</i>)	1-866-709-4993	1-540-349-4097
Dulles (IAD)(<i>Shenandoah Area</i>)	1-866-599-3874	1-540-349-0493
Baltimore (BWI)(<i>Chesapeake Area</i>)	1-866-429-5882	1-540-349-8478
Richmond (RIC)Charlottesville (CHO)(<i>James River Area</i>)	1-866-640-4124	1-540-349-9697

TABLE 2 – TRACON PHONE NUMBERS FOR MOJAVE OPERATIONS*

AREA	TOLL FREE	LOCAL
Air Traffic Manager, High Desert TRACON Heinrich, Mark	N / A	661-258-6300
Administrative Assistant Coley, Rosemary	N / A	661-277-2023

*For additional numbers to coordinate non-RVSM operations, see Appendix A

Special (TFR's etc)

For Local Virginia Operations: Review of DCA Permanent TFR

- Within 60 nm radius of DCA VOR: 230 kt airspeed max
- 60 – 30 nm radius of DCA VOR: No VFR allowed; must be on flight plan and in contact with Potomac Approach with discreet squawk. May NOT squawk 1200.
- 30 – 15 nm DCA VOR: 180 kt airspeed max.
- 15 -13 nm radius of DCA VOR: Airline traffic ONLY. No others allowed.

ENVELOPE EXPANSION PLAN

PRESENTER:

Build Up Strategy



Review / Approval of test Plan

Limitations

CG / weight / Airspeed / Altitude / fuel / number of crew

Configuration Management Process & Records

GROUND/TAXI TESTS (IF APPLICABLE)

PRESENTER:

Equipment

Configuration/Conformity

Required Instrumentation

Personnel

Safety (Engines running / tie downs / RF signals / Flight Control Movements)

Weather

Limitations (day / night / winds, etc)

SAFETY

PRESENTER:

Risk Assessments

Safety equipment

Safety Training (emergency egress)

Fire department / Crash rescue plan

Mishap Response Plan per Flight Operations Manual

OPERATIONS

PRESENTER:

Ops Manual / procedures

Aircraft Release procedures



FLIGHT TEST & SAFETY CONSULTANTS, LLC

Schedule

Flight Following

Deployment Plan / Support

Budget / Hotel / Vehicles / Equipment

ASSESSMENT CHECKLIST

READINESS CATEGORY	STATUS: GREEN / YELLOW / RED
DESIGN REVIEW	
AIRCRAFT READINESS	
PERSONNEL READINESS	
INSTRUMENTATION	
AIRFIELD	
TEST AREA / TFR STATUS	
ENVELOPE EXPANSION PLAN	
GROUND / TAXI TESTS	
SAFETY / RISK ASSESSMENT	
OPERATIONS	



FLIGHT TEST & SAFETY CONSULTANTS, LLC

APPENDIX A – ATC PHONE NUMBERS FOR NON-RVSM AIRCRAFT

Updated May 13, 2005

1. Read “Procedures For Accommodation of Non-RVSM Aircraft” in paragraph “j” of FAA Notice GEN 04009. Only limited categories of Non-RVSM aircraft will be accommodated in domestic U.S. RVSM airspace.

2. GEN04009 is posted in the “North American RVSM” section of the FAA RVSM Documentation Webpage. (http://www.faa.gov/ats/ato/rvsm_documentation.htm)

Ident	Centers	Center Phone Numbers
ZAB	Albuquerque	505-856-4547
ZAN	Anchorage	907-269-1108
ZAU	Chicago	630-906-8686
ZBW	Boston	603-879-6861
ZDC	Washington	703-779-3743
ZDV	Denver	303-651-4202
ZFW	Ft Worth	817-858-7504
ZHU	Houston	281-230-6262
ZID	Indianapolis	317-247-2243
ZJX	Jacksonville	904-549-1460
ZKC	Kansas City	913-254-8795
ZLA	Los Angeles	661-575-2074
ZLC	Salt Lake	801-320-2565



FLIGHT TEST & SAFETY CONSULTANTS, LLC

ZMA	Miami	305-716-1736
ZME	Memphis	901-368-8249
ZMP	Minneapolis	651-463-5545 (5/13/05)
ZNY	New York	631-468-1080
ZOA	Oakland	510-745-3332
ZOB	Cleveland	440-774-0428
ZSE	Seattle	253-351-3529
ZSU	San Juan	787-253-8664
ZTL	Atlanta	770-210-7052
ZUA	Guam CERAP	671-366-5151
E10	High Desert TRACON	661-277-3843