



Dryden Centerwide Procedure

Code X

Airworthiness & Flight Safety Review Process

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Electronically approved by
Assistant Director for Management Systems

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1.0 PURPOSE OF DOCUMENT

This document establishes the requirements for the Airworthiness and Flight Safety Review (AFSR) process used at the NASA Dryden Flight Research Center. Use [G-7900.3-001](#), Airworthiness and Flight Safety Review, Independent Review, Technical Brief, and Mini-Tech Brief, in conjunction with this document.

2.0 PROCEDURE SCOPE & APPLICABILITY

Scope: This process applies to all flight activities and hazardous ground tests involving aircraft, critical flight systems, and/or experimental facilities for which NASA DFRC has any airworthiness, ground, flight or range safety responsibility or that involve NASA DFRC personnel utilizing non-NASA assets.

Applicability: This procedure applies to all DFRC personnel involved in the airworthiness and flight safety review process.

3.0 PROCEDURE OBJECTIVES, TARGETS, METRICS, & TREND ANALYSIS

Objective: Ensure that research and airborne science projects (for which the Center has any responsibility for ground, flight and/or range safety and/or mission success) are airworthy, safe, and maximize mission success.

Target: Test and airborne science missions are well planned and residual risks are communicated to and accepted by the DFRC Director.

Metric: Approval to proceed to test or flight.

Objective: Ensure that test and airborne science research projects comply with Dryden policies and procedures.

Target: All Dryden policies and procedures followed.

Metric: Briefings in accordance with applicable policies and procedures.

Objective: Allow the AFSRB to determine necessary additional procedures to ensure flight safety and to maximize mission success.

Target: Briefings provide required technical and safety information.

Metric: Briefings in accordance with applicable policies and procedures.

Objective: Review flight activities and tests involving all aircraft, critical flight systems, and experimental facilities.

Target: Provide required technical and safety information during briefings.

Metric: Briefings in accordance with applicable policies and procedures.

Trend analysis: Metrics will be analyzed to determine whether procedural objectives have been met.

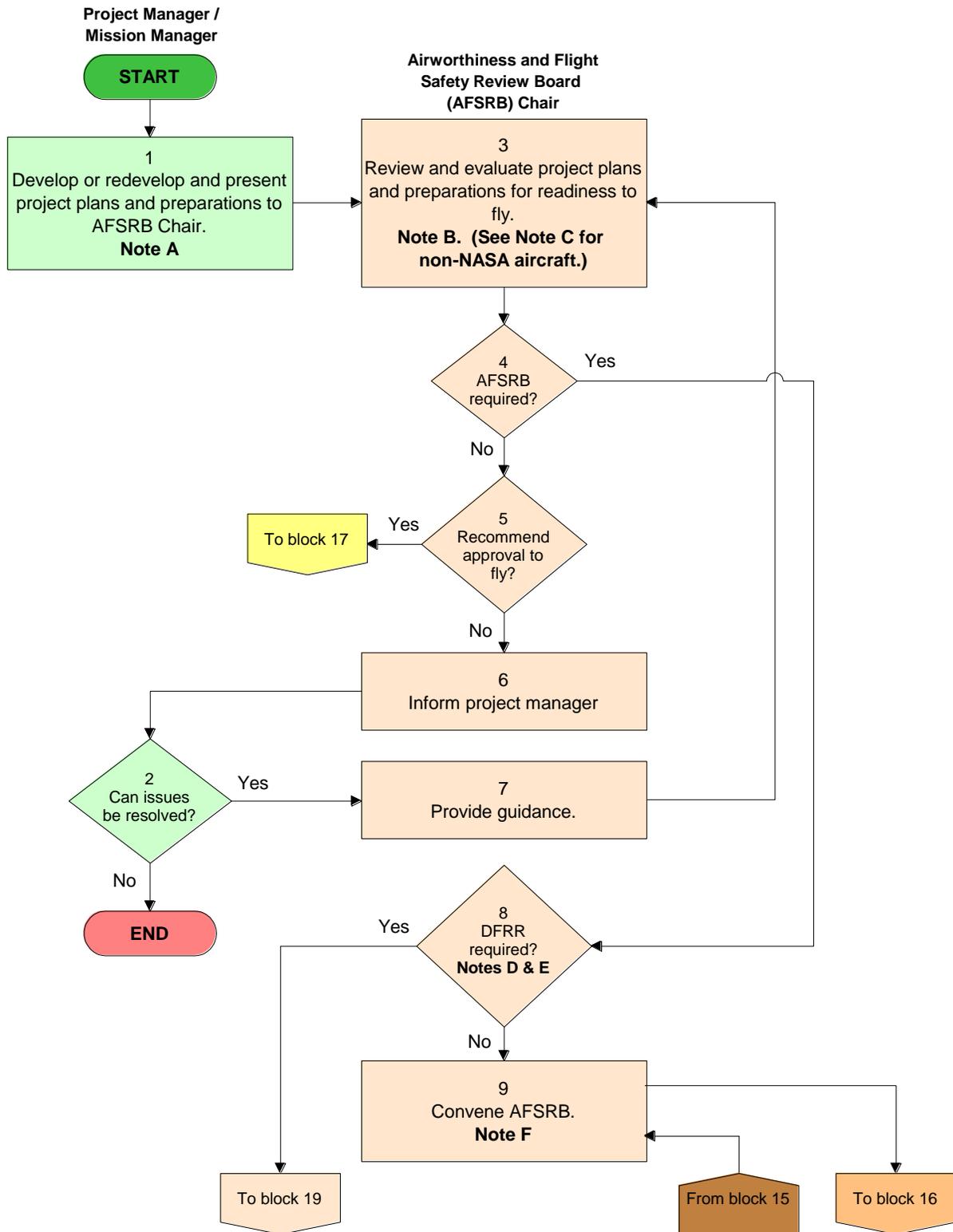
4.0 WAIVER AUTHORITY

The requirements of this procedure may be waived per the process presented in [DPR-7123.2-001](#), Waivers and Deviations to Technical Requirements.

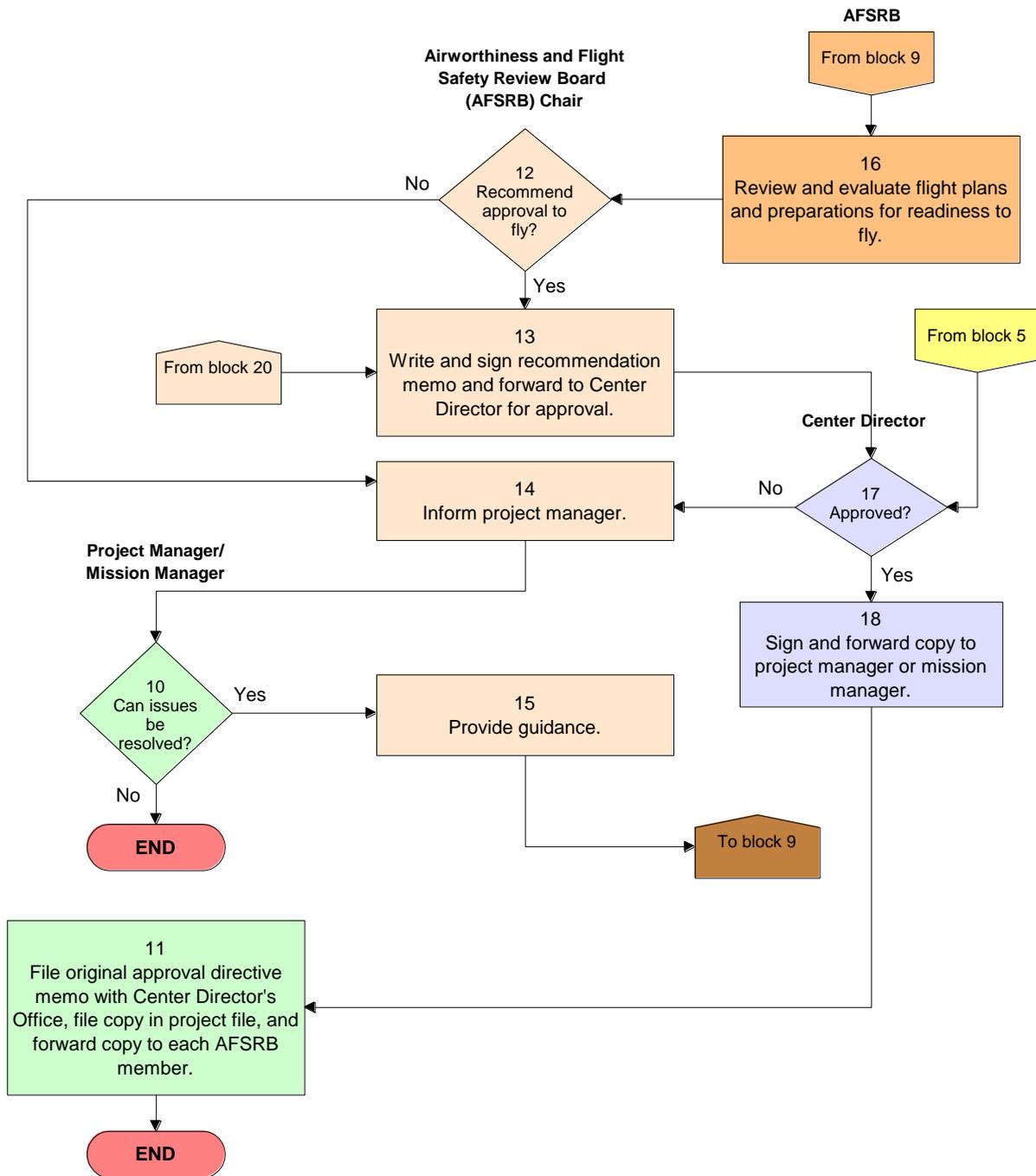
This procedure may be waived by the Center Director or the Center Chief Engineer for projects conducted jointly with organizations having a DFRC recognized safety review process (for example, other NASA Centers, the Air Force Flight Test Center, United States Navy test organizations, etc.) or where the safety review process is covered in a Memorandum of Agreement (MOA). Typically, DFRC is represented in safety review processes conducted by other organizations for joint projects. An informational briefing may be requested by the Chief Engineer to inform DFRC management of the project content, test plan, and hazard analysis. DFRC accepted risks must be approved by the Center Director or NASA HQ, as appropriate.

5.0 FLOWCHART

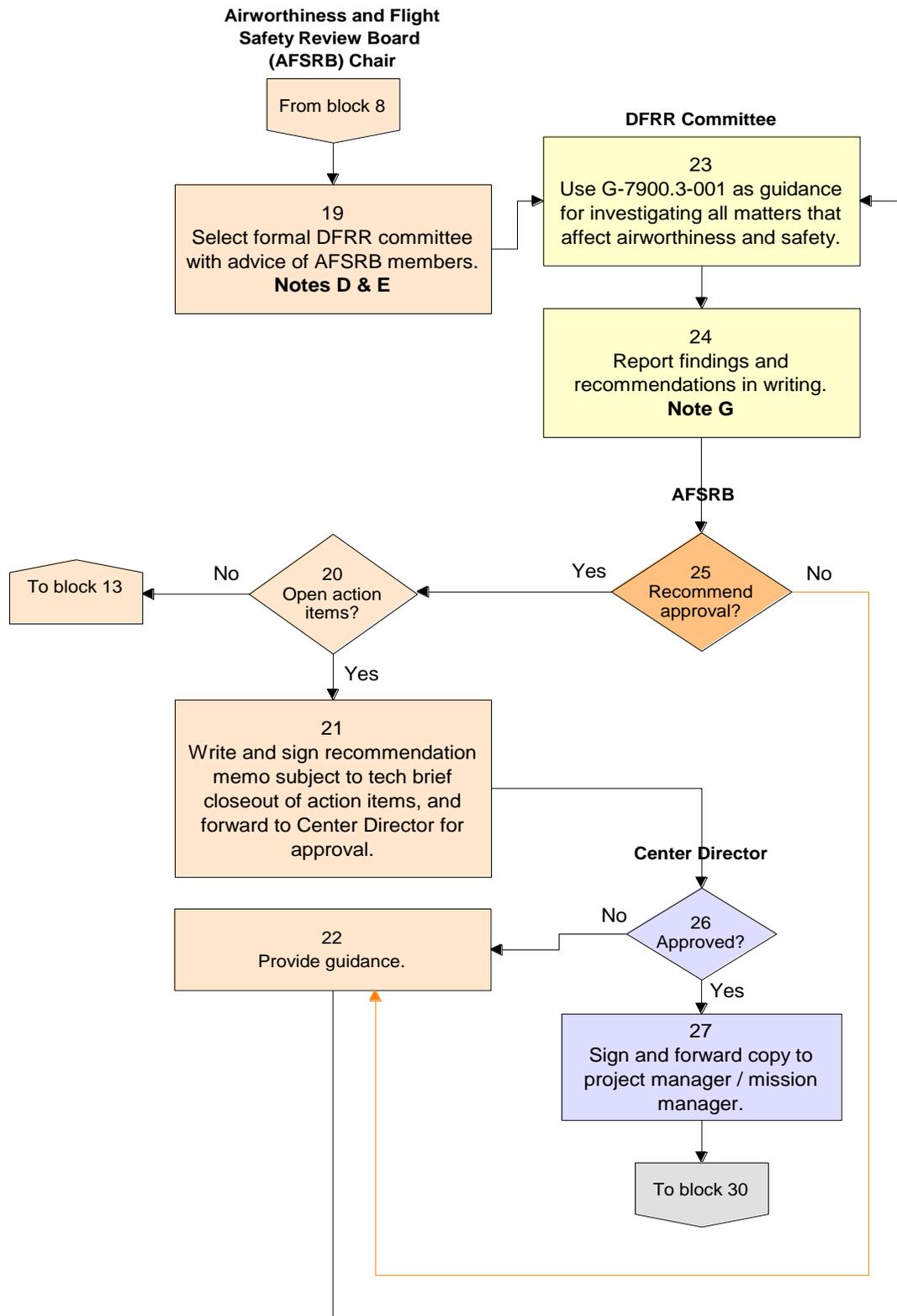
The DFRR can be required independent of the AFSRB, and is frequently done this way for less technically intensive projects such as the SBLT pylon on the F-15B. The DFRR will write a report to the Chief Engineer and attend the tech brief in lieu of the AFSRB to answer questions from the tech brief committee.



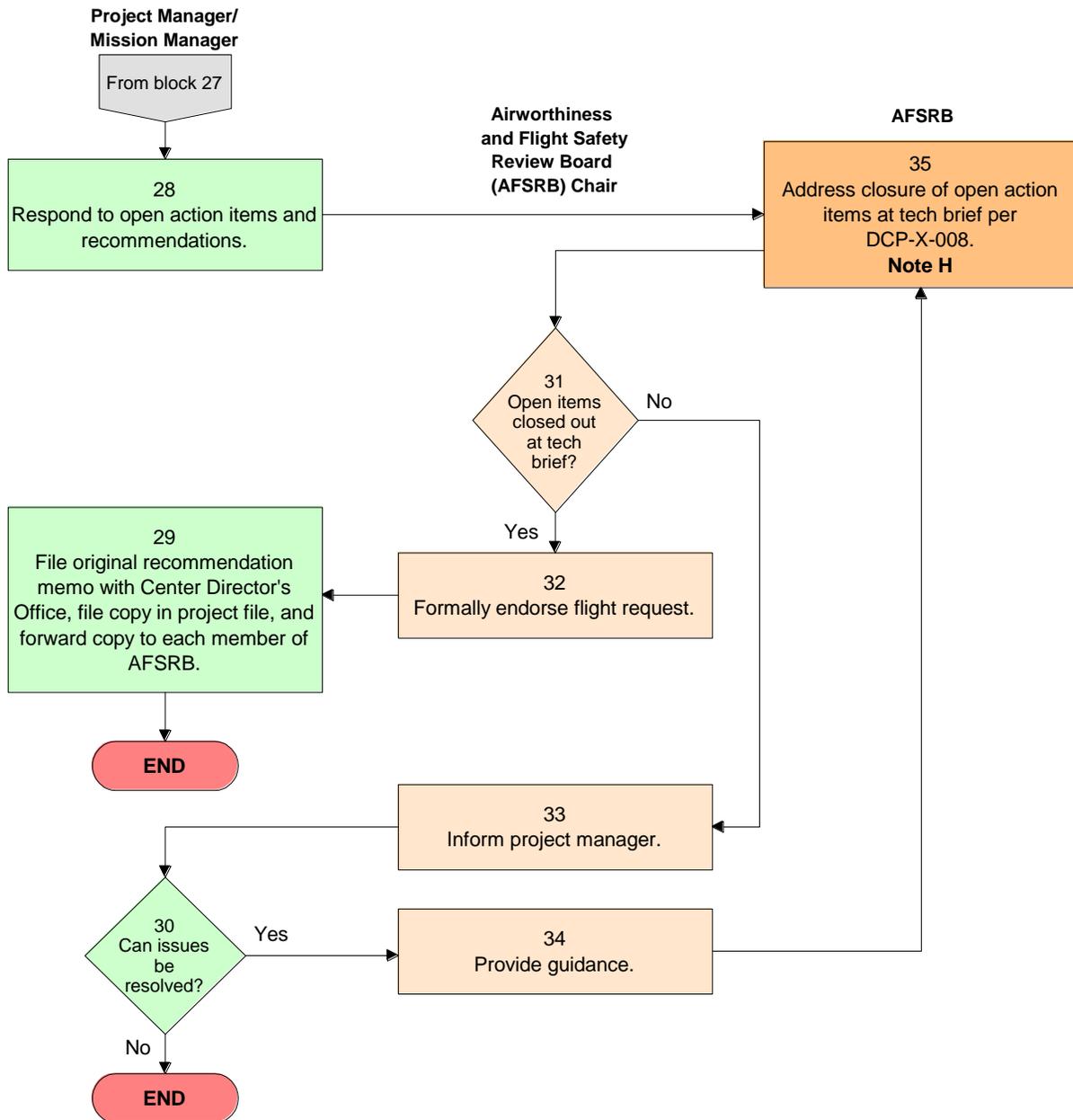
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6.0 FLOWCHART NOTES

Note A

Plans and preparations will include the following:

- project description
- operations summary
- aircraft/experiment development status/readiness
- ground systems readiness
- analyses/simulations
- system safety analysis
- schedule
- Configuration Control Board (CCB) actions closed out
- Waivers and status
- issues/project requests

Note B

The Dryden Chief Engineer serves as the AFSRB Chair, and the Dryden Deputy Chief Engineer serves as the alternate chair.

In accordance with AFFTCI 91-105, the Chief Engineer will notify AFFTC/SET of any potentially high risk test activity or any test activity that will affect normal AFFTC operations prior to the start of testing. AFFTC/SET participation in the AFSRB accomplishes this requirement.

In accordance with AFFTC 91-105, joint projects that involve AFFTC assets (other than airspace, range, and airfield support of normal flight operations) require AFFTC review and approval. AFFTC/SET participation in the AFSRB may meet this requirement. The AFFTC Form 5028 cover sheet, as a minimum, is used by AFFTC/SET to document the process and gain approval for AFFTC participation. Projects may provide AFFTC/SET with the AFSRB briefing materials to attach to the AFFTC Form 5028 to provide additional information to the AFFTC approval chain of command. Projects should plan for the additional coordination time required for AFFTC approval.

Note C

Projects and tests that involve NASA assets (flight crew and/or high value equipment) and are flown on non-NASA aircraft will follow guidelines and policy set forth in NPD 7900.4, NASA Aircraft Operations Management, and NPR 7900.3. Additionally, the requirements of [DOP-O-300](#), Chapter 10, Joint Flight Operations, will be followed when applicable.

Note D

Criteria for chartering Dryden Flight Readiness Review (DFRR)

- New project or operation with assumptions of risk
- Phased project requiring approval to enter succeeding phase
- Project exceeding limit previously approved by AFSRB - After major modification(s) to aircraft

Note E

DFRR composition depends upon vehicle, mission, and technologies involved.
DFRR chair is an expert senior technical person.

Note F

Membership of the AFSRB is appointed in by the Center Director and typically includes the following:

- Chief Engineer (Chair, Code X)
- Associate Center Director for Programs (Code XP)
- Director for Flight Operations (Code O)
- Director for Research & Engineering (Code R)
- Project Mission Director (Code PA, PE, or PS, as appropriate)
- Chief, Safety and Mission Assurance (Code S)
- Director, Mission Information and Test Systems (Code M)
- Chief Pilot (Code OF)
- Aviation Safety Officer

A quorum consists of the Chair and representatives from Codes M, O, R, S, and XP.

Note G

- The written report will be delivered to the AFSRB and the project manager at least 48 hours prior to the AFSRB meeting.
- Hard copies of the oral presentation will be made available to project manager and AFSRB members 24 hours prior to the AFSRB. Copies of slides may be made available using online resources available at NASA DFRC, such as email or computer servers accessible by the AFSRB membership. At least five hard copies are provided to the AFSRB Chair and membership at the briefing to facilitate documentation of discussion items.
- The final DFRR briefing to the AFSRB must precede the project's technical briefing by a minimum of three workdays. This time may be compressed with the concurrence of the AFSRB Chair.

Note H

Representatives of the DFRR Board will be present at the technical briefing in order to concur on closures of any issues that were deferred to the tech brief.

7.0 MANAGEMENT RECORDS & RECORDS RETENTION

Records of the required meetings are filed in the DFRC Chief Engineer's Office. An electronic version will be filed by the project on the MARS server in the Center's tech brief folder under the appropriate project.

Records of required meetings are retained for the duration of a project. They are further retained in the DFRC Chief Engineer's Office at the discretion of the Chief Engineer to provide guidance to future projects with similar technical or safety related challenges.

Records are preserved, maintained, and disposed of in accordance with NPR 1441.1, NASA Records Retention Schedules, and DFRC records management procedures. Destruction of any records, regardless of format, without an approved schedule is a violation of Federal law.

8.0 RELEVANT DOCUMENTS**8.1 Authority Documents**

NPD 7900.4	NASA Aircraft Operations Management
NPR 7900.3	Aircraft Operations Management
DPR-7123.2-001	Waivers and Deviations to Technical Requirements

8.2 Reference Documents

AFFTC 91-105	AFFTC Test Safety Review Process
DCP-X-008	Tech Brief (T/B) & Mini Tech Brief (Mini T/B)
DOP-O-300	Aircrew Flight Operations Manual
G-7900.3-001	Airworthiness And Flight Safety Review, Independent Review, Technical Brief And Mini-Tech Brief Guidelines

Document History Log

IPP Review Date: 05-25-10

This page is for informational purposes and does not have to be retained with the document.

Status Change	Document Revision	Effective Date	Page	Description of Change
Baseline		01-04-99		
Revision	A	04-15-99	All	<ul style="list-style-type: none"> Modified signature block from "Approved" to "Electronically Approved by" In all blocks containing the words "Approval Directive", the word "memo" was added Modified block 4 of the "Project Manager/Mission Manager" on page 1 and block 3 on page 2 Modified block 1 of "FRR Committee" on page 2
Revision	B	10-03-00	All	<ul style="list-style-type: none"> Page 1: Modified block 5 of "AFSRB Chair" and changed "Flight Readiness Review (FRR)" to "Dryden Independent Review (DIR)" in block 6, added 2nd block to "Center Director", and modified block 4 of "Project Manager/Mission Manager". Page 2: Modified blocks 3 & 6 of "AFSRB Chair", added 2nd block to the "Center Director", and modified block 3 of "Project Manager/Mission Manager". Page 3: added block 1 for "Center Director", modified block 2 of "Project Manager/Mission Manager", and changed "FRR" to "DIR" in Notes 2 & 3.
Revision	C	01-27-03	All	<ul style="list-style-type: none"> Replaced "Dryden Independent Review (DIR)" with "Dryden Flight Readiness Review (DFRR)" in all references. Changed "Approval Directive" to "recommendation" in all references, including column title p. 2. Moved Notes 1, 2 and 3 to within proximity of where each is referenced. Additional minor edits throughout.
Revision	D	11-26-03	1	<ul style="list-style-type: none"> Note 3 that describes how the airworthiness process will apply to non-NSA aircraft
Admin Change	D-1	11-20-08	All	<ul style="list-style-type: none"> Moved stand-alone flowchart to document template Extended expiration date
Revision	E	08-06-10		<ul style="list-style-type: none"> Extended expiration date by 6 months.
Revision	F	01-01-11	All	<ul style="list-style-type: none"> Updated format to current template. Added required paragraphs. Modified Section 3.0. Minor revisions of procedures. Moved flowchart notes to separate section. Rebuilt flowchart.
Admin Change	F-1	04-25-11		Page 8: Note B, added paragraphs 2 and 3.

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