



Introduction to Revision of DDPMAS-2002

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CONTENTS

Introduction

DDPMAS Revision Approach

DDPMAS - Policy

Indian Military Technical Airworthiness Regulations (IMTAR)

Manuals

Conclusion



INTRODUCTION

Evolution of DDPMAS-2002

- Regulatory Document for Military Airworthiness in India
- First Document Issued in Year 1975 : DDPMAS-75
- Revised in Year 2002 : DDPMAS-2002
- Volume on Software Certification Released in Year 2009 : DDPMAS-2002, Vol-II

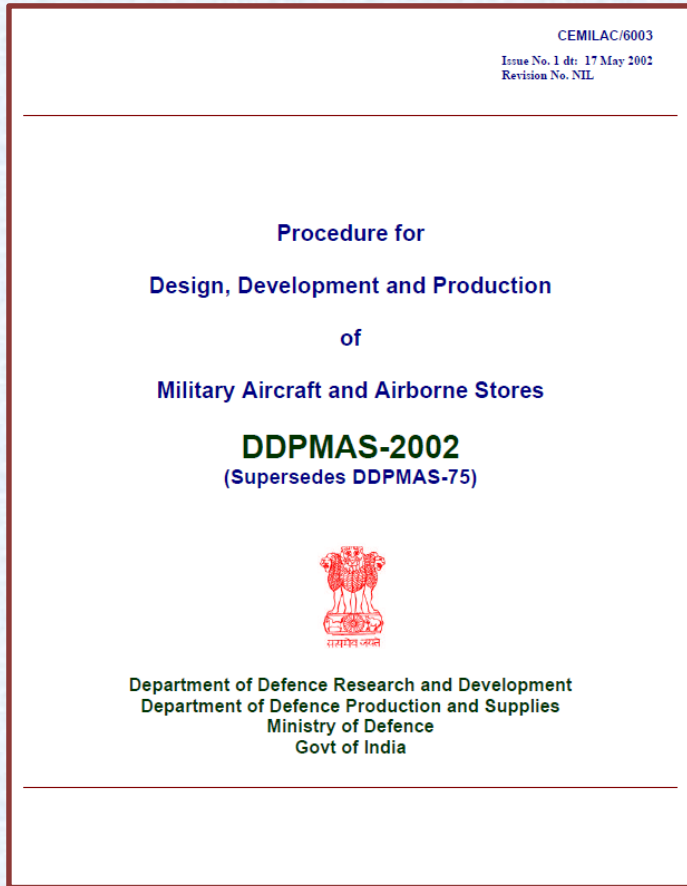
Need for Revision

- Last Revision 18 Years Back
- Clear Separation of Policy Aspects and Certification Requirements & Procedures
- Alignment with DPP and DPM
- Aiding Make-in-India Initiatives of GOI

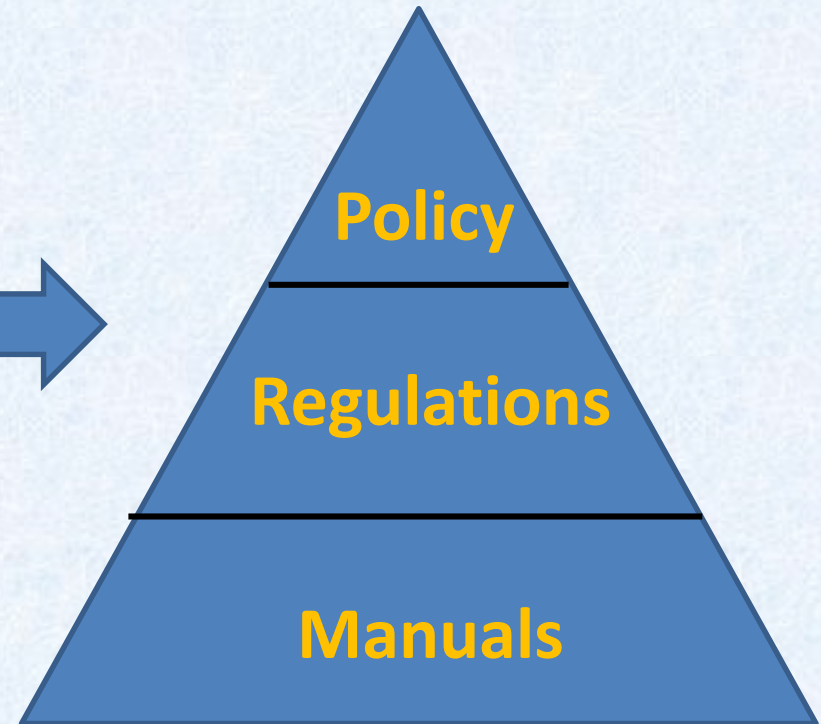
Benefits Envisaged

- Layered and Structured Approach - Ease of Understanding & Application
- Coverage for Unmanned Air Systems and Air Launched Missiles
- Alignment with International Best Practices
- Future Mutual Recognition with Foreign NAAs

DDPMAS REVISION APPROACH



Existing
DDPMAS-2002



Revised DDPMAS
Structured, Coherent & Hierarchical



DDPMAS REVISION APPROACH

- **Policy**
 - Outlines policy level aspects towards ensuring Airworthiness of Military Air Systems and Airborne Stores
 - Defines roles, responsibilities and empowerment of all the stakeholders in Indian Military Airworthiness Framework
- **Regulations (IMTAR-21)**
 - Outline procedural aspects towards achieving Military Airworthiness Certification in India
 - Define Technical Airworthiness Requirements and associated Acceptable Means of Compliance & Guidance Material
- **Manuals**
 - Define Airworthiness Certification Criteria based on tailored standards
 - Provide Templates, Forms, Directives etc. to facilitate effective implementation of Policy & Regulations



DDPMAS - POLICY

Broad Outline of DDPMAS – Policy:

CHAPTER	TITLE
PART 1 - AIRWORTHINESS MANAGEMENT FRAMEWORK	
Chapter 1	Introduction to Indian Military Airworthiness
Chapter 2	Indian Military Airworthiness Framework
Chapter 3	Military Air System / Airborne Store Acquisition
PART 2 - DESIGN, DEVELOPMENT, PRODUCTION & CERTIFICATION OF MILITARY AIRSYSTEMS AND AIRBORNE STORES	
Chapter 1	Ab-Initio Design, Development, Production and Certification of Air Systems & Airborne Stores
Chapter 2	Licensed Production of Air Systems and Airborne Stores
Chapter 3	Bought- Out Air Systems and Airborne Stores
Chapter 4	Continuing & Continued Airworthiness
Chapter 5	Flight Testing of Air Systems and Airborne Stores
Chapter 6	Unmanned Air Systems (UAS)
Chapter 7	Air Launched Missiles (ALM)
Chapter 8	Research Air Systems and Airborne Stores
Chapter 9	Civil Certified Military Aircraft
Chapter 10	Export of Indigenous Air Systems and Airborne Stores
Chapter 11	Organization Approvals
Chapter 12	Indigenous Substitution of Airborne Stores



INDIAN MILITARY TECHNICAL AIRWORTHINESS REGULATIONS - 21 (IMTAR - 21)

Broad Outline of IMTAR-21: The entire set of regulations are divided in various subparts

IMTAR-21 SUBPARTS

Subpart A: General Procedures

Subpart B: Ab-initio Development of Air System leading to Military Type Certificate (MTC) and Production

B1: Aircraft

B2: Unmanned Air Systems (UAS)

B3: Air Launched Missiles (ALMs)

B4: Aero Engines

Subpart C: Ab-initio Development of Airborne Stores leading to TA / LoA / IMTSOA

C1: Airborne Stores leading to Type Approval (TA)

C2: Air Armament Stores and Air Launched Weapons leading to Type Approval

C3: Airborne Materials and Standard Parts leading to Letter of Approval (LoA)

C4: Airborne Stores leading to LoA

C5: Airborne Stores, for which Indian Military Technical Standards Order(IMTSO) exists, leading to IMTSO Approval (IMTSOA)

C6: Airborne / Ground System Software and Complex Electronic Hardware (CEH) leading to LoA



INDIAN MILITARY TECHNICAL AIRWORTHINESS REGULATIONS - 21 (IMTAR - 21)

Subpart D: Modifications of Air Systems leading to Amended MTC (AMTC) / Supplemental MTC (SMTC)

Subpart E: Modifications of Airborne Stores

Subpart F: Production of Air Systems and Airborne Stores

Subpart G: Organization Approvals

G1: Design Approved Organization Scheme (DAOS)

G2: Production Approved Organization Scheme (PAOS)

G3: Maintenance Approved Organization Scheme (MAOS)

Subpart H: Certificates of Airworthiness (CoA) for Air Systems and Airborne Stores

Subpart I: Research Air Systems and Airborne Stores

Subpart K: Indigenous Substitution of Airborne Stores

Subpart L: Continued and Continuing Airworthiness

Subpart M: Repair of Air Systems and Airborne Stores

Subpart N: Bought-Out Air Systems and Airborne Stores

Subpart P: Flight Testing of Air Systems and Airborne Stores

Subpart Q: Identification of Air Systems and Airborne Stores

Subpart R: Civil Certified Military Aircraft

Subpart S: Customer Furnished Equipment (CFE) and Customer Specified Equipment (CSE)

Subpart T: Test Rigs and Tools, Testers & Ground Equipment (**TTGEs**)

Subpart U: NAA Recognition Process (**Mutual Recognition**)



ORGANISATION OF IMTAR-21 SUBPARTS

- Each Subpart contains all the applicable regulations within the scope of Subpart title
- Regulations cover the technical airworthiness requirements for the air system / airborne store
- A Subpart is organized as having:
 - **Rationale:** Each Subpart identifies a Rationale as a basis for the set of regulations
 - **Contents:** Contents of the Subparts capturing numbered topics / titles of the regulations
 - **Regulation:** The Regulation is described and is uniquely numbered which acts as the Regulatory Article
 - **Acceptable Means of Compliance (AMC):** These are nonexclusive means of demonstration of compliance with the regulation to the Technical Airworthiness Authorities. Alternate and equivalent means may also be listed wherever applicable
 - **Guidance Material:** This may be used by the applicant to facilitate in meeting the AMC, thereby complying to the Regulation



MANUALS

- **Third layer in Hierarchical Structure of Revised DDPMAS**
- **Aims to Act as Facilitator to Implement Policy & Regulations**
- **Defines Airworthiness Certification Criteria**
 - Based on Tailored Military Standards
- **Provides Various Templates & Forms**

(40+ Templates, to be made available on website also)

 - Airworthiness Certification Plan
 - Qualification Test Procedure
 - Quality Assurance Plan
 - Flight Clearance Certificate
 - Flight Test Schedule
 - Forms for MTC & TA Application etc.
- **Provides Airworthiness & Quality Assurance Directives**
 - ESS
 - SOFT
 - HALT / HASS
 - Additive Manufacturing etc.

Note: Not Part of Present Package of Draft Documents (To be released on website in parallel with Finalized Policy & IMTAR-21)



CONCLUSION

Background Work Done

- Discussions and Suggestions from various Stakeholders
- Critical Study of Internationally Followed Military Airworthiness Certification Models
- Studies towards Aligning DDPMAS with DPP & DPM
- Extensive Reviews of Draft within CEMILAC & RCMAs

Feedback Expected from Stakeholders

- Structure of Revised DDPMAS
- Sufficiency of Level of Abstraction at Policy Level
- Comprehensives of Regulations – Any Merging / Segregation of Subparts Required
- Structure of a Subpart – Any Additions / Deletions Required

Future Course of Action

- Implementation of Feedback Received from Joint Airworthiness Committee (JAC) Members
- Hosting Revised Drafts on Website for Suggestions
- Conduct of JAC Meetings for Finalisation
- Review by Empowered Committee
- Approval by Secretaries & Release