Agenda:

- Introduction to the BMPs
- Revision 5.1 Changes
- KPIs

Presenters:

- Kelly Lyon
- Roy Resto

AFRA

AIRCRAFT FLEET RECYCLING ASSOCIATION

BASICS: The Requirements for accreditation for Disassembly and Recycling are contained in these BMPs:

Disassembly Best Management Practice (BMP) for Management of Used Aircraft Parts and Assemblies

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY

Revision:	Date:	Revision Description:	Prepared By:
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Incorporated ESD information, updated Contracted definitions, and EOL Certification. Standardized 'Facility' and 'Company' use	AFRA BMP Development Committee

Title Page

Page 1 of 27 Rev 5.1

Recycling Best Management Practice (BMP) for Management of Used Aircraft Parts and Assemblies

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY

Revision:	Date:	Revision Description:	Prepared By:
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	TBD	Standardized 'Facility' and 'Company' use. Added EOL Certification	AFRA BMP Development Committee

Title Page

Page 1 of 20 Rev 5.1

BEST PRACTICES

ARTICLE 1 – OVERVIEW

This Best Management Practice is published and maintained by the Aircraft Fleet Recycling Association (AFRA). AFRA is a non-profit association composed of Facilities of common interest and focus regarding with world's older aircraft fleet. AFRA was formed by eleven charter Facilities in June 2006 with the mission to organize and present an industry perspective on aircraft sustainability via the development and recommendation of best practices and technologies for the management of the world's older fleet.

A specific goal identified during the Chartering activities was the commitment to complete AFRA best management practice (BMP) documents on the Management of Used Aircraft Parts and Assemblies and the Recycling of Used Aircraft Materials, Parts and Assemblies. These BMP documents were published as stand-alone documents in 2008 and 2012 respectively. Those publications met the initial AFRA obligations.

This document represents a collection of recommendations concerning best practices for the management of parts that are removed from an aircraft, engine or other asset during the disassembly of the asset at the end of its service life.

Supporting this Disassembly BMP are the following separate documents:

- *Disassembly Practice Guide and Minimum Standards.*
- *Disassembly Auditing Guidance Checklist.*

Facilities considering accreditation as a Recycler must consult these separate documents:

- *Recycling BMP*
- *Recycling Practice Guide and Minimum Standards.*
- *Recycling Auditing Guidance Checklist.*

BASICS: Each BMP contains an overview of AFRA and the Accreditation program in Article 1

AFRA
AIRCRAFT FLEET RECYCLING ASSOCIATION

BASICS: Each BMP also contains a listing of definitions you are greatly encouraged to familiarize yourself with in Article II

ARTICLE II – DEFINITIONS AND BMP SYSTEM REQUIREMENTS

Article II a) Definitions. For the purposes of this BMP, the following underlined terms are defined:

An **Airworthiness Event** is any event affecting an Asset, Assembly or Part that could reasonably have an adverse effect on the airworthiness of Parts from the Asset. This can include an aircraft accident, or unusual heat, stress, or environmental conditions.

An **Assembly** is a functionally integrated group of Parts that together make up a component required for the certified operation of a commercial aircraft (e.g., engines, landing gear, etc.).

The **Asset** means an item that is being disassembled, such as an aircraft, engine, or any Assembly of commercial aircraft Parts, thereof.

Best Practice means a practice that is specifically recommended by this document. It does not necessarily infer that a related regulatory mandate exists (nor that such a mandate should exist). If a Facility voluntarily chooses to comply with this Best Management Practice, then in order to remain in compliance, the Facility must follow each Best Practice found in this document as determined by the AFRA certification process.

Contracted Disassembly of an Asset, (i.e. Aircraft, Aerospace materials, and/or components) in which the contracted third party facility ensures that there is a procedure in place for evaluating and selecting the disassembly facility so as to assure the contracted company can adequately meet the Facility's AFRA BMP Requirements.
NOTE: Facilities desiring to be accredited for Contracted Disassembly must have the auditable means to assure the Contracted Facilities are able to meet all the applicable requirements of this BMP.

The AFRA Accredited Facility must describe how their disassembly requirements are flowed down to the contracted disassembly company. This should be described in the Organization's BMP Manual. These requirements may also be included in the contract. All applicable aspects of

BASICS: Supplementing each BMP is the respective Audit Guidance Checklist

Disassembly Audit Guidance Checklist

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY			
Revision:	**Date:**	**Revision Description:**	**Prepared By:**
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Incorporated ESD information, and EOL Certification. Standardized 'Facility' and 'Company' use. Added Objective Evidence to comments column	AFRA BMP Development Committee

Title Page

Page 1 of 27 Rev 5.1

Recycling Audit Guidance Checklist

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY			
Revision:	**Date:**	**Revision Description:**	**Prepared By:**
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Standardized 'Facility' and 'Company' use. Added EOL Certification. Added Objective Evidence to Comments column	AFRA BMP Development Committee

Title Page

Page 1 of 30 Rev 5.1

Disassembly Audit Guidance Checklist

BEST PRACTICE REFERENCE	APPLIC-ABILITY	AUDITOR TASK	PROCEDURE, OTHER REFS, COMMENTS, OBJECTIVE EVIDENCE
FACILITY/ LOCATION CHARACTERISTICS; IDENTIFICATION AND COMPLIANCE WITH RELEVANT STANDARDS			
BEST PRACTICE (III)(a) 1 - The Facility shall have a fixed location for disassembly, or a procedure for assuring that the location for disassembly is adequately prepared, or both.	M	Identify whether there is a fixed location, remote location(s), or both.	
BEST PRACTICE (III)(a) 2 - If the Facility has a fixed location for disassembly, then the Facility shall identify, and ensure compliance with, applicable environmental laws and standards.	M A	Identify compliance procedures or list of applicable laws; identify responsible party. Review the audit records; confirm that facility is ensuring compliance.	
BEST PRACTICE (III)(a) 3 - If the Facility disassembles Assets at locations remote from the Facility's main location(s), then the Facility shall have one or more procedures designed to identify, and ensure compliance with, applicable environmental laws and standards.	M A	Identify compliance procedures; identify responsible party. Review the audit records; confirm that compliance is ensured at remote locations	
BEST PRACTICE (III)(a) 4 - If the Facility has a fixed location for disassembly, then the Facility shall identify, and ensure compliance with, applicable occupational health and safety laws and standards.	M A	Identify compliance procedures or list of applicable laws; identify responsible party. Review the audit records; confirm that facility is ensuring compliance	

BASICS:

Here is an excerpt of an <u>Audit Guidance Checklist.</u>

The value of the checklists:

- ***Used for your own internal audits***
- ***Source of Data for Continuous Improvement***
- ***In-depth audits contribute to a reduction in external audit findings***

BASICS: Audit Guidance Checklist

Applicability Codes: For a given Best Practice citation, these codes denote the area within the system that the Best Practice mostly applies to. The codes are:

M	=	Manual
F	=	Facility
I	=	Inventory
A	=	Audit Records
T	=	Tooling Records
TR	=	Training Records
W	=	Work Package
C	=	Contract Review (Pull contracts for the reviewed Work Package)

Disassembly Audit Guidance Checklist

BEST PRACTICE REFERENCE	APPLIC-ABILITY	AUDITOR TASK	PROCEDURE, OTHER REFS, COMMENTS, OBJECTIVE EVIDENCE
BEST PRACTICE (V)(a) 2 – A disassembly Facility shall have or prepare a manifest of parts expected to be removed from the Asset.	M	Identify a procedure meeting this requirement; if there is no procedure then make a note to confirm that the issue is addressed as a contracting norm.	
	W	Review representative work package(s) to assure creation of manifest(s).	
	C	Review representative contract(s) to assure reference to manifest(s)	

The Audit Checklist contains Applicability Codes as shown in this excerpt

BASICS: Also supplementing the BMPs are the important Practice Guides and Minimum Standards

Disassembly Practice Guide and Minimum Standards

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY			
Revision:	**Date:**	**Revision Description:**	**Prepared By:**
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Incorporated ESD information, updated Contracted definitions, and EOL Certification. Standardized 'Facility' and 'Company' use	AFRA BMP Development Committee

Title Page

Page 1 of 44 Rev 5.1

Recycling Practice Guide and Minimum Standards

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY			
Revision:	**Date:**	**Revision Description:**	**Prepared By:**
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Standardized 'Facility' and 'Company' use. Added EOL Certification	AFRA BMP Development Committee

Title Page

Page 1 of 37 Rev 5.1

From Definitions:

A **Minimum Standard** states the minimum requirement in order to pass the AFRA BMP audit on the first audit. A Facility that does not meet the minimum standard will not pass the audit. Minimum standards do not take the place of the BMP Best Practice Standards; they are advisory in nature and they are meant to establish minimum levels for companies new to the industry.
Facilities are expected to evolve their own quality systems beyond the Minimum Standards in order to meet the intent of the BMP Standards. As the industry evolves, AFRA expects that the AFRA BMP Committee will raise the Minimum Standards.

BASICS: Here's a simple excerpt of a <u>Practice Guide and Minimum Standard</u>. Note the key elements

Article II b) BMP System Requirements

BEST PRACTICE (II)(b) 1 - Each accredited company shall have a BMP Manual.

Practice Guides:

1. The manual may consist of assigned hard copies or electronic copies (such as PDF) available to staff, or a combination of these two.
2. Care should be taken to assure that unauthorized staff do not have access to the manual which can be edited; this is to prevent unintended alterations.

Minimum Standards

A current manual available to staff

Disassembly Audit Guidance Checklist

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY			
Revision:	**Date:**	**Revision Description:**	**Prepared By:**
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Incorporated ESD information, and EOL Certification. Standardized 'Facility' and 'Company' use. Added Objective Evidence to comments column	AFRA BMP Development Committee

Title Page

Page 1 of 27 Rev 5.1

Disassembly Best Management Practice (BMP) for Management of Used Aircraft Parts and Assemblies

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY			
Revision:	Date:	Revision Description:	Prepared By:
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Incorporated ESD information, updated Contracted definitions, and EOL Certification. Standardized 'Facility' and 'Company' use	AFRA BMP Development Committee

Title Page

Page 1 of 27 Rev 5.1

Disassembly Practice Guide and Minimum Standards

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY			
Revision:	**Date:**	**Revision Description:**	**Prepared By:**
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Incorporated ESD information, updated Contracted definitions, and EOL Certification. Standardized 'Facility' and 'Company' use	AFRA BMP Development Committee

Title Page

Page 1 of 44 Rev 5.1

Viola, there you have it; there are 6 documents for AFRA

Recycling Audit Guidance Checklist

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY			
Revision:	**Date:**	**Revision Description:**	**Prepared By:**
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Standardized 'Facility' and 'Company' use. Added EOL Certification. Added Objective Evidence to Comments column	AFRA BMP Development Committee

Title Page

Page 1 of 30 Rev 5.1

Recycling Best Management Practice (BMP) for Management of Used Aircraft Parts and Assemblies

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY			
Revision:	Date:	Revision Description:	Prepared By:
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	TBD	Standardized 'Facility' and 'Company' use. Added EOL Certification	AFRA BMP Development Committee

Title Page

Page 1 of 20 Rev 5.1

Recycling Practice Guide and Minimum Standards

Recycling Practice Guide and Minimum Standards

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY			
Revision:	**Date:**	**Revision Description:**	**Prepared By:**
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Standardized 'Facility' and 'Company' use. Added EOL Certification	AFRA BMP Development Committee

Title Page

Page 1 of 37 Rev 5.1

Over to Royboy

HIGHLIGHTS OF THE 5.1:

- Introduced an End-of-Life Certification requirement and AFRA Form 1
- Standardized the use of the terms ‘Facility’ vs ‘Company’
- Strengthened and clarified the Contracted definitions
- Added “Objective Evidence” to the Comments field of the internal/self audit
- Incorporated ESD information and introduced a new concept, a ‘Best Practice’ document… the ESD Best Practice

- **Introduced an End-of-Life Certification requirement and AFRA Form 1**

- **From the BMP:**

ARTICLE XII – END OF LIFE CERTIFICATION

BEST PRACTICE (XII) 1 – Upon completion of the disassembly operation, and the remaining asset has undergone destruction/demolition, the facility shall issue an attestation as such.

BEST PRACTICE (XII) 2 – The asset's data plate shall be removed and accounted for.

BTW, EASA just issued this SUPs Notification

Lost/Stolen Original Manufacturer Data Plate for Airbus A320-214 MSN6267

Publication Date: 19/11/2024 | **Date Reported to EASA:** 12/11/2024 | **Case type:** Stolen Parts cases | **Manufacturer:** Airbus

Suspected Unapproved Parts Details

Product: A320-214
Part name: Manufacturer Aircraft Identification Plate
Part Number: NSA9117-70

Get notified via email alerts

On the 21st of October 2024 the UK CAA was notified that the original manufacturer aircraft data plate for Airbus A320-214 MSN6267 (P/N NSA9117-70) was reported missing. Airbus was requested to re-manufacture the aircraft data plate.

The original manufacturer aircraft data plate for Airbus A320-214 MSN6267 (P/N NSA9117-70) is to be considered as an unapproved part, and not eligible for installation on any aircraft.

Owners, operators, and maintenance organizations are encouraged to inspect their aircraft and inventories for the referenced part. If this part is found affixed to an aircraft or stored in the inventory, it is recommended to remove and quarantine it, to prevent its installation.

Contact us about this SUP

https://www.easa.europa.eu/en/domains/aircraft-products/suspected-unapproved-parts/loststolen-original-manufacturer-data-plate

ARTICLE XII – End Of Life Certification

BEST PRACTICE (XII) 1 – Upon completion of the disassembly operation, and the remaining asset has undergone destruction/demolition, the facility shall issue an attestation as such.

Practice Guides

1. The attestation shall be in the appearance of a signed Certificate or Form stating, for example, the assets' MSN, ESN, or Serial Number.
2. The document shall state plainly that the asset, by way of destruction/demolition, has reached the End of its life.
3. Typically the original is presented to the customer (with a copy in the facilities' records), or if the asset is owned by the facility, retained in the records.
4. The document should state what occurred with the data plate (see 2 below), e.g. "Data plate returned to customer", or "Data plate retained on file", or scrapped, etc.
5. AFRA Form 1 may be used to meet these purposes.

Minimum Standards:

Written procedure.

Highly Recommended:

Use the Practice Guide and Minimum Standards as your go-to reference for the BMP

BEST PRACTICE (XII) 2 – The asset's data plate shall be removed and accounted for.

Practice Guides

1. The data plate of the asset shall be removed from the asset.
2. The data plate can either be kept with the Certification and returned to the customer, or if the asset is owned by the facility kept with the Certification, or if destroyed, is accounted for, e.g., pictures, scrap certificate, etc.
3. AFRA Form 1 may be used to account for this action.

Minimum Standards:

Written procedure.

Highly Recommended:

Use the Practice Guide and Minimum Standards as your go-to reference for the BMP

- AFRA Form 1
- From page 3 of the form:

AFRA FORM 1: Asset End of Life Certificate

AFRA Form 1 Instructions

BACKGROUND:

This form constitutes a way, but not the only way of complying with the BMP ARTICLE XII END OF LIFE CERTIFICATION. This AFRA Form 1 was modeled based on suggestions from an AIRBUS Document "White Paper on Aircraft End of Life…", in which it recommended a Form with 'Permanent Withdrawal from Service" and "Disposal for Treatment" entries. This accounts for these inclusions on this form.

AFRA FORM 1: Asset End of Life Certificate

GENERAL

1. COMPANY INTIATING THIS FORM	
2. MSN/ESN/SN, SPECIFY:	
3. MODEL or DESCRIPTION	
4. FOR AIRCRAFT, SPECIFY HOW THE FOLLOWING WERE ACCOUNTED FOR:	
REGISTRATION:	
AIRWORTHINESS CERTIFICATE:	
5. SPECIFY HOW THE DATA PLATE WAS ACCOUNTED FOR: M/D/YYYY	

PART A: PERMANENT WITHDRAWAL FROM SERVICE

I hereby attest that the specified asset was removed from service with the intent to have it disassembled and that corresponding records are on file at this place of business.

6. PLACE WHERE DISASSEMBLY WILL OCCUR					
ADDRESS:					
CITY:		STATE:		ZIP:	
7.FIRM PERFORMING THE DISASSEMBLY:					
8. DATE THE ASSET WAS COMMITED TO DISASSEMBLY: M/D/YYYY					
9. NAME OF COMPANY OFFCIAL MAKING THIS ATTESTATION:					

10. SIGNATURE

Hand or digital signature

Date M/D/YYYY

- **AFRA Form 1, Page 1**
- **Note provision to document the final demise of the data plate**
- **Part A: … attest that the specified asset was removed from service with the intent to have it disassembled…**

AFRA FORM 1: Asset End of Life Certificate

PART B: DISPOSAL FOR TREATMENT

Following the harvesting of the desired parts during disassembly, I hereby attest that the remainder of the noted asset will be demolished/destroyed to extent to preclude reentry into service, and that corresponding records are on file at this place of business.

If this attestation is based on a third party performing the demolishment/destruction, note this detail in the comments section.

If any part(s) of the remaining asset is/are committed for educational, display, or training purposes, this is noted in the COMMENTS field. In such cases we will assure that the agreement, contract, or equivalent will bind the party to never use or intend to reuse the asset for any reentry into service actions.

11. DATE THE ASSET WAS COMMITED TO DESTRUCTION: M/D/YYYY	
12. NAME OF COMPANY OFFCIAL MAKING THIS ATTESTATION:	
13. COMMENTS:	

14. SIGNATURE

Hand or digital signature

Date M/D/YYYY

- **AFRA Form 1, Page 2**

- **Part B: … attest that the remainder of the noted asset will be demolished/destroyed to the extent to preclude reentry into service…**

AFRA FORM 1: Asset End of Life Certificate

• AFRA Form 1, Page 3

AFRA Form 1 Instructions

BACKGROUND:

This form constitutes a way, but not the only way of complying with the BMP ARTICLE XII END OF LIFE CERTIFICATION. This AFRA Form 1 was modeled based on suggestions from an AIRBUS Document "White Paper on Aircraft End of Life…", in which it recommended a Form with 'Permanent Withdrawal from Service" and "Disposal for Treatment" entries. This accounts for these inclusions on this form.

INSTRUCTIONS:

• Instructions

Blocks:

1-3: Self Explanatory

4: Enter the information of who and how these were accounted for. This could include statements of actions by the previous owner/operator, or actions taken by the facility noted on the Form.

5: Enter the information of who and how this was accounted for. This could include a statement of actions by the previous owner/operator, or actions taken by the facility noted on the Form.

6-12: Self Explanatory

13: COMMENTS:

- If any part of the remaining asset was dedicated to other purposes such as educational, display, or training, the circumstances will be summarized in this block.
- If the demolishment/destruction was performed by a third party, enter the detail herein

14.Self Explanatory

NEXT:

Standardized the use of the terms 'Facility' vs 'Company'

- **Standardized the use of the terms 'Facility' vs 'Company'**

The **Facility** means the business that is seeking to comply with this BMP, for disassembly of Assets. This term is not necessarily meant to imply a geographically fixed operation; meaning that the term "Facility" may refer to a business that goes to the specific location of an Asset in order to disassemble it and the Facility may operate at more than one geographical location. The Facility is expected to comply with all laws and regulations applicable to its jurisdiction. Whereas 'Facility' implies the accredited entity, '**Company**' used herein refers to contracted entities.

NEXT:

Strengthened and clarified the Contracted definitions

Contracted Disassembly of an Asset, (i.e. Aircraft, Aerospace materials, and/or components) in which the contracted third party facility ensures that there is a procedure in place for evaluating and selecting the disassembly facility so as to assure the contracted company can adequately meet the Facility's AFRA BMP Requirements.
NOTE: Facilities desiring to be accredited for Contracted Disassembly must have the auditable means to assure the Contracted Facilities are able to meet all the applicable requirements of this BMP.

The AFRA Accredited Facility must describe how their disassembly requirements are flowed down to the contracted disassembly company. This should be described in the Organization's BMP Manual. These requirements may also be included in the contract. All applicable aspects of

- **Strengthened and clarified the Contracted definitions**
- **Same for Recycling**

the AFRA BMP must be addressed, see (III)(a) 6 and corresponding Practice Guide.

- **Amplified in the Practice Guide**

BEST PRACTICE (III)(a) 6 – When disassembly is contracted to a third party company, the facility shall have a procedure for evaluating and selecting the disassembly company so as to assure the contracted company can adequately meet the Facility's AFRA BMP Requirements.

- **From the Practice Guide**

Practice Guides:

1. The BMP contains many requirements applicable to the process of disassembly. When the Facility chooses to out-source a disassembly project, there must a procedure in place which assures those requirements are being upheld.
2. Examples of how a Facility may make such assurances include but are not limited to:
    a. Using other AFRA accredited facilities.
    b. Flowing down all applicable requirements in the form of an agreement or contract.
3. Performing and documenting an on-site audit of the contractor to assure the requirements are being met.

Minimum Standards

A procedure denoting the method used evaluate, select, and assure the contractor is meeting applicable BMP requirements.

NEXT:

Added "Objective Evidence" to the Comments field of the internal/self audit

Disassembly Audit Guidance Checklist

BEST PRACTICE REFERENCE	APPLIC-ABILITY	AUDITOR TASK	PROCEDURE, OTHER REFS, COMMENTS, OBJECTIVE EVIDENCE
FACILITY/ LOCATION CHARACTERISTICS; IDENTIFICATION AND COMPLIANCE WITH RELEVANT STANDARDS			
BEST PRACTICE (III)(a) 1 - The Facility shall have a fixed location for disassembly, or a procedure for assuring that the location for disassembly is adequately prepared, or both.	M	Identify whether there is a fixed location, remote location(s), or both.	
BEST PRACTICE (III)(a) 2 - If the Facility has a fixed location for disassembly, then the Facility shall identify, and ensure compliance with, applicable environmental laws and standards.	M A	Identify compliance procedures or list of applicable laws; identify responsible party. Review the audit records; confirm that facility is ensuring compliance.	

- **Added "Objective Evidence" to the Comments field of the internal/self audit**

A simplistic definition of Objective Evidence: The details of what was sampled to verify compliance or noncompliance.

For example, as applicable, names, P/Ns, inventory locations, calibration records, tags, contracts/agreements, Manifests, etc.

NEXT:

Incorporated ESD information and introduced a new concept, a 'Best Practice' document… the ESD Best Practice

- **Incorporated ESD information and introduced a new concept, a 'Best Practice' document… the ESD Best Practice.**

- **From the BMP:**

BEST PRACTICE (III)(a) 8 - When disassembly of electrostatic sensitive materials and components is being performed, The Facility shall establish a procedure that defines protocols on safe handling of sensitive material and components. Additionally, the Facility shall have trained its personnel performing the disassembly of this sensitive material to its procedures and protocols. The record of training shall be kept per the Facility's record retention procedure and protocols. Note: AFRA has created a Best Practice Guidance document that contains recommendations/examples of how to handle and process electrostatic sensitive materials and components during the disassembly process.

• From the Practice Guide and Minimum Stanards:

BEST PRACTICE (III)(a) 8 - When disassembly of electrostatic sensitive materials and components is being performed, The Facility shall establish a procedure that defines protocols on safe handling of sensitive material and components. Additionally, the Facility shall have trained its personnel performing the disassembly of this sensitive material to its procedures and protocols. The record of training shall be kept per the Facility's record retention procedure and protocols. Note: AFRA has created a Best Practice Guidance document that contains recommendations/examples of how to handle and process electrostatic sensitive materials and components during the disassembly process.

Practice Guides:

1. Written procedures should account for the two main activities regarding handling of these parts: removal from the aircraft, and subsequent handling.
    - Removal from the aircraft: The written procedures should consider whether the applicable Aircraft Maintenance Manual (AMM) is available and if so to draw from or refer to it for its written procedures.
    - Subsequent handling: Consists of visual inspection on an ESD station, pictures, capping, bagging, etc.

Minimum Standards

- ESD Training Records for Employees handling ESD parts.
- Written procedures defining their protocols for handling ESD parts. Alternatively, it is acceptable if the procedures refer to the AFRA ESD BP.
- An appropriate stock of various ESD caps and ESD packaging bags. Wrist strap, chord, clips as/if needed to work the aircraft, and properly configured and grounded ESD inspection station.

ESD BEST PRACTICE

Published by the

Aircraft Fleet Recycling Association

AFRA
AIRCRAFT FLEET RECYCLING ASSOCIATION

Revision 0.0

REVISION HISTORY			
Revision:	**Date:**	**Revision Description:**	**Prepared By:**
0.0	11/11/24	Initial Release	AFRA BMP Development Committee

- **Use of a 'BEST PRACTICE' is a new concept for AFRA.**
- **Think of it as an Advisory Circular for the BMP Requirements**
- **In the future, BEST PRACTICES on other topics may be issued**

ESD BEST PRACTICE

Table of Contents

Contents

Title Page 1
Table of Contents 2
DEFINITIONS 3
BACKGROUND 4
A. Introduction 4
B. Identifying ESD Sensitive Parts 5
C. Handling of ESD Parts 7
SHIPSIDE PRACTICES 8
A. Aircraft Maintenance Manuals (AMM) Available: 8
B. AMM Not Available: 12
D. Engine Disassembly 16
INSPECTION OF ESD PARTS AFTER REMOVAL FROM AIRCRAFT 17
A. General 17
PACKAGING OF ESD PARTS 18
RELATED DOCUMENTS: 18
CITATIONS 18

- **The creation of this Best Practice was necessitated by the observation among the auditors that significant variation existed among Facilities regarding their ESD procedures**

Back to Kelly

Revision 5: BMP Excerpts:

Disassembly Best Management Practice (BMP) for Management of Used Aircraft Parts and Assemblies

Published by the

Aircraft Fleet Recycling Association

Revision 5.0

REVISION HISTORY

Revision:	Date:	Revision Description:	Prepared By:
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee

Title Page

Page 1 of 26 Rev 5.0

Recycling Best Management Practice (BMP) for Management of Used Aircraft Parts and Assemblies

Published by the

Aircraft Fleet Recycling Association

Revision 5.0

REVISION HISTORY

Revision:	Date:	Revision Description:	Prepared By:
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee

Title Page

Page 1 of 20 Rev 5.0

Key Performance Indicators, KPIs, are those that measure the behavior and performance of a system. It's a set of quantifiable measurements that a Facility uses to gauge its performance over time. For Facilities which voluntarily employ KPIs, AFRA will recognize one of four levels of implementation: Bronze, Silver, Gold or Diamond. Recognition consists of acknowledgement of the compliant level in the accreditation information listings.

Revision 5: BMP Excerpts:

Recycling Practice Guide and Minimum Standards

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY

Revision:	Date:	Revision Description:	Prepared By:
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	11/11/24	Standardized 'Facility' and 'Company' use. Added EOL Certification	AFRA BMP Development Committee

Title Page

Recycling Best Management Practice (BMP) for Management of Used Aircraft Parts and Assemblies

Published by the

Aircraft Fleet Recycling Association

Revision 5.1

REVISION HISTORY

Revision:	Date:	Revision Description:	Prepared By:
4.0	1 July 2018	Complete re-write and reformatted from rev 3.3	AFRA BMP Development Committee
5.0	30 Sept. 2020	Incorporated KPIs	AFRA BMP Development Committee
5.1	TBD	Standardized 'Facility' and 'Company' use. Added EOL Certification	AFRA BMP Development Committee

Title Page

ARTICLE XI – KPIs

BEST PRACTICE (XI) 1 – A facility which voluntarily chooses to employ Key Performance Indicators, and to receive AFRA recognition of the same, shall implement one of four levels of KPI; Bronze, Silver, Gold, or Diamond.

BEST PRACTICE (XI) 2 – All KPIs shall be measured every two years, or more frequently if desired. For the Diamond level, rather than every two years, the KPI data must be attributable to each asset by aircraft MSN or asset serial number.

That's all that's in the two BMP Documents for KPIs.

NEXT: The details in the Practice Guide and Minimum Standards

Revision 5: Practice Guide and Minimum Standards Excerpts:

ARTICLE XI – KPIs

BEST PRACTICE (XI) 1 – A facility which voluntarily chooses to employ Key Performance Indicators, and to receive AFRA recognition of the same, shall implement one of four levels of KPIs; Bronze, Silver, Gold, or Diamond.

Practice Guides:

The four levels consist of the following KPIs:

BRONZE	SILVER	GOLD	DIAMOND*
KPI MEASUREMENTS:			
• Number of parts reused. • Recyclability rate.	• Number of parts reused. • Recyclability rate. • Total Waste. • Total hazardous waste • Core disposal rate	• Number of parts reused. • Recyclability rate. • Total Waste. • Total hazardous waste. • Core disposal rate. • Reusability rate.	• Number of parts reused. • Recyclability rate. • Total Waste. • Total hazardous waste. • Core disposal rate. • Reusability rate. • Energy recoverability rate.

*** In order to achieve the Diamond Level, individual KPI Data must be clearly derived from, and attributable to a serialized asset; for example, an aircraft MSN, Engine Serial Number, or APU Serial Number.**

The Restatement of the BMP Requirement

Notice that each level has progressively more KPIs

Revision 5: Practice Guide and Minimum Standards Excerpts:

BEST PRACTICE (XI) 2 – All KPIs shall be measured every two years, or more frequently if desired. For the Diamond level, rather than every two years, the KPI data must be attributable to each asset by aircraft MSN or asset serial number.

The Restatement of the BMP Requirement

Practice Guides

1. The maximum period for collection and documenting of the KPI shall not exceed 2 years.
2. Based on frequency of the available data or the automation of the process, the facility may choose to document the resulting KPI more frequently than every two years.
3. For the Diamond Level, each KPI data result must be attributable to the asset's MSN or serial number. For example, for the formula 'Number of Parts Reused', an acceptable form of KPI expression-result would be 'For aircraft MSN 45678, the Number of Parts Reused was…'

Practice Guide commentary of the requirement

Revision 5: Lets look at a simple example; you wish to be audited for the Bronze Level

BRONZE
• Number of parts reused. • Recyclability rate.

We'll see later that this KPI is typically associated with Disassembly Operations

Whereas this KPI is typically associated with Recycling Operations

But what if I'm currently accredited just for Disassembly, not Recycling?

Revision 5: Exclusions

8. Exclusions:
    - A facility may cite an exclusion if the KPI involves data it does not have access to. For example, if Bronze is chosen, and if the facility is accredited to Disassembly only (it is not accredited for Recycling), it may cite an exclusion to the Recyclability Rate KPI.
    - Conversely, if the facility is accredited to Recycling only, it may cite an exclusion to the Number of Parts Reused KPI.
    - Facilities accredited to both Disassembly and Recycling regardless of whether it is contracted or not, shall implement all the KPIs applicable to the chosen level.
    - Facilities which claim publicly (in advertising for example) that they achieve certain levels of, for example, reuse or recycling, and the claimed data could reasonably be derived from one of the KPIs, then an exclusion cannot be listed.

Revision 5: Exclusions

8. Exclusions:
    - A facility may cite an exclusion if the KPI involves data it does not have access to. For example, if Bronze is chosen, and if the facility is accredited to Disassembly only (it is not accredited for Recycling), it may cite an exclusion to the Recyclability Rate KPI.
    - Conversely, if the facility is accredited to Recycling only, it may cite an exclusion to the Number of Parts Reused KPI.
    - Facilities accredited to both Disassembly and Recycling regardless of whether it is contracted or not, shall implement all the KPIs applicable to the chosen level.
    - Facilities which claim publicly (in advertising for example) that they achieve certain levels of, for example, reuse or recycling, and the claimed data could reasonably be derived from one of the KPIs, then an exclusion cannot be listed.

Revision 5: Exclusions

8. Exclusions:
    - A facility may cite an exclusion if the KPI involves data it does not have access to. For example, if Bronze is chosen, and if the facility is accredited to Disassembly only (it is not accredited for Recycling), it may cite an exclusion to the Recyclability Rate KPI.
    - Conversely, if the facility is accredited to Recycling only, it may cite an exclusion to the Number of Parts Reused KPI.
    - Facilities accredited to both Disassembly and Recycling regardless of whether it is contracted or not, shall implement all the KPIs applicable to the chosen level.
    - Facilities which claim publicly (in advertising for example) that they achieve certain levels of, for example, reuse or recycling, and the claimed data could reasonably be derived from one of the KPIs, then an exclusion cannot be listed.

Revision 5: Exclusions

8. Exclusions:
    - A facility may cite an exclusion if the KPI involves data it does not have access to. For example, if Bronze is chosen, and if the facility is accredited to Disassembly only (it is not accredited for Recycling), it may cite an exclusion to the Recyclability Rate KPI.
    - Conversely, if the facility is accredited to Recycling only, it may cite an exclusion to the Number of Parts Reused KPI.
    - Facilities accredited to both Disassembly and Recycling regardless of whether it is contracted or not, shall implement all the KPIs applicable to the chosen level.
    - Facilities which claim publicly (in advertising for example) that they achieve certain levels of, for example, reuse or recycling, and the claimed data could reasonably be derived from one of the KPIs, then an exclusion cannot be listed.

Revision 5: Bronze Level: The Formulas

BRONZE

- Number of parts reused.
- Recyclability rate.

1. Number of parts reused, the formula:

Number of parts reused = Total Number of parts intended to be returned to the market[A]

A: May consist of:

- Parts intended to be sold as AR
- Parts already tagged (i.e. Inspected)
- Parts already or intended to be sent to a repair station/AMO to be overhauled, repaired etc.
- Combination of all the above

Revision 5: Bronze Level: The Formulas

BRONZE
• Number of parts reused. • Recyclability rate.

2. Recyclability rate, the formula:

$$\frac{\text{Total Recycled mass output}^{B}}{\text{Input mass}^{C}} \times 100$$

B: Consisting of all materials that were recycled (see definitions in the BMP of Recycled Material, and Recycling).
C: May consist of the totals of the mass sent to or received by the recycling facility. Alternatively, the published empty weight of the aircraft may be used.

Revision 5: The Next Level, Silver:

SILVER

- Number of parts reused.
- Recyclability rate.
- Total Waste.
- Total hazardous waste
- Core disposal rate

Notice that each successive level incorporates the KPI from the previous level….

…and adds additional KPIs

So… what are the minimum standards I'll be audited to?

BEST PRACTICE (XI) 1 – A facility which voluntarily chooses to employ Key Performance Indicators, and to receive AFRA recognition of the same, shall implement one of four levels of KPIs; Bronze, Silver, Gold, or Diamond.

Minimum Standards:

- The Facility Chooses one of the levels.
- Written procedures for the chosen level incorporating the noted formulas.
- All formulas are accounted for including exclusions

So… what are the minimum standards I'll be audited to?

BEST PRACTICE (XI) 2 – All KPIs shall be measured every two years, or more frequently if desired. For the Diamond level, rather than every two years, the KPI data must be attributable to each asset by aircraft MSN or asset serial number.

Practice Guides

1. The maximum period for collection and documenting of the KPI shall not exceed 2 years.
2. Based on frequency of the available data or the automation of the process, the facility may choose to document the resulting KPI more frequently than every two years.
3. For the Diamond Level, each KPI data result must be attributable to the asset's MSN or serial number. For example, for the formula 'Number of Parts Reused', an acceptable form of KPI expression-result would be 'For aircraft MSN 45678, the Number of Parts Reused was…'

Minimum Standards:

Written procedure.

What does the Audit Guidance Checklist Say?

BEST PRACTICE REFERENCE	APPLIC-ABILITY	AUDITOR TASK	PROCEDURE, OTHER REFS, COMMENTS, OBJECTIVE EVIDENCE
		KPIs	
BEST PRACTICE (XI) 1 – A facility which voluntarily chooses to employ Key Performance Indicators, and to receive AFRA recognition of the same, shall implement one of four levels of KPIs; Bronze, Silver, Gold, or Diamond.	M	Identify the procedure. For a given level assure all the applicable KPIs are accounted for including any exclusions.	
	F	Sample available advertising media. Assure no promotional claims are being made for which a corresponding KPI has an exclusion.	

What does the Audit Guidance Checklist Say?

BEST PRACTICE (XI) 2 – All KPIs shall be measured every two years, or more frequently if desired. For the Diamond level, rather than every two years, the KPI data must be attributable to each asset by aircraft MSN or asset serial number.	M F	Identify the procedure After the initial period of the implemented KPI, check that the results of the KPI are available at the specified frequency. For the Diamond level, check that each KPI lists the MSN or Asset serial number it pertains to.	

Notice the 2 year clock starts from the date of implementation in your manual

AFRA
AIRCRAFT FLEET RECYCLING ASSOCIATION

Your questions for the Staff?