

STANDARDS RELATED DOCUMENT

ATP-3.3.4.2.2

RECOMMENDED AIR-TO-AIR REFUELLING (AAR) AIRCREW CERTIFICATION AND CURRENCY

Edition A Version 1

JULY 2019



NORTH ATLANTIC TREATY ORGANIZATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

NATO STANDARDIZATION OFFICE (NSO)

NATO LETTER OF PROMULGATION

18 July 2019

1. The enclosed Standards Related Document, ATP-3.3.4.2.2, Edition A, Version 1, RECOMMENDED AIR-TO-AIR REFUELLING (AAR) AIRCREW CERTIFICATION AND CURRENCY, which has been approved in conjunction with ATP-3.3.4.2 by the nations in the MCASB, is promulgated herewith.
2. ATP-3.3.4.2.2, Edition A, Version 1 is effective upon receipt and supersedes AAR-SRD-2 , Edition A, Version 1 which shall be destroyed in accordance with the local procedure for the destruction of documents.
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RECORD OF SPECIFIC RESERVATIONS

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CHAPTER 1 INTRODUCTION

1.1 AIM

The aim of this SRD is to establish and describe the recommended minimum certification and currency standards for Receiver and Tanker Aircrew, to permit safe, multi-national AAR activity between assets from different NATO and Allied Nations. This SRD does not cover initial training requirements, which remains a National responsibility.

1.2 MUTUAL TRAINING REQUIREMENT

The execution of AAR is a challenging skill. Furthermore, when not practiced regularly, a crew's ability to conduct AAR normally suffers from skill fade; the actual rate of loss being dependent upon the experience level of the crewmember. It is therefore critical to safety of flight that all participating tanker and receiver crewmembers achieve a mutually acceptable level of training to maintain proficiency; this minimizes the risk to both the tanker and receiver.

1.3 READ-ACROSS STRATEGY

Given the number of receiver-tanker combinations it would prove practically impossible to certify, and maintain currency, on each and every individual platform. A read-across strategy must be employed by grouping tankers and receivers into classes (see Table 1 and Table 2 in CHAPTER 2) and applying certification and currency criteria where necessary.

NOTES

THE CRITERIA STATED WITHIN NEITHER ADDRESSES THE INITIAL TRAINING STANDARDS FOR AIRCREW NOR THE TRAINING, CERTIFICATION AND CURRENCY CRITERIA FOR INSTRUCTORS.

THE RESPONSIBILITY FOR THE ABOVE TRAINING REMAINS WITH THE RESPECTIVE NATIONAL AUTHORITY.

THE CRITERIA STATED HEREIN SHOULD BE RECOGNISED AS THE MINIMUM STANDARD FOR MULTI-NATIONAL OPERATIONS.

NATIONS RETAIN THE RIGHT TO DETERMINE IF ADDITIONAL TRAINING, OR MORE-STRINGENT STANDARDS, ARE NECESSARY FOR BI-LATERAL OPERATIONS AND SHOULD BE DESCRIBED IN THE RESPECTIVE NATIONAL STANDARDS-RELATED DOCUMENT (SRD).

THIS DOCUMENT DOES NOT SUPERSEDE OR REPLACE EXISTING (BI-LATERAL/ MULTI-LATERAL) ARRANGEMENTS BETWEEN NATIONS TO PROVIDE TECHNICAL, LEGAL OR FINANCIAL AUTHORITY TO CONDUCT AAR.

CHAPTER 2 KEY TERMS AND DEFINITIONS

2.1 TANKER CLASS

Those tankers with similar aerodynamic characteristics and that operate in a similar flight envelope. Most of NATO's tanker variants can be grouped into three generic tanker classes, as depicted in the following table:

Boom Tankers	Drogue Tankers	Buddy-Buddy Tankers
KC-10	A-310 MRTT	F/A-18E/F Super Hornet
KDC-10	A-330 MRTT	PA 200 Tornado
KC-135	A-400M	Rafale M
KC-46	C-135FR	Super Etendard
KC-707	C-160	
KC-767	KC-10	
C-135FR	K/H/M/C-130	
	KC-135	
	KC-46	
	KC-707	
	KC-767	

Table 1: Tanker Class

2.2 RECEIVER CLASS

NATO receivers can be grouped, in terms of performance, into generic classes:

Fighters		Heavy aircraft		Rotary Wing	Tilt Rotor
Probe	Receptacle	Probe	Receptacle	Probe	Probe
AMX	A-10	A-400M	A-330	AW-101	V-22
AV-8B	F-15	C-27J	B-1	CH-53	
EA-6B	F-16	C-130	B-2	EC-725	
EF-2000	F-22	C-160	B-52	H/MH-60	
F/A-18	F-35	C-295	C-5	MH-47	
F-35		E-3D	C-17		
JAS-39			C-130		
Mirage 2000			E-3 All Types		
Mirage F1			E-8		
Rafale			KC-10		
Super Etendard			KC-135		
Tornado			KC-46		
Others			KC-767		
			R/W/OC-135		

Table 2: Receiver Class

2.3 DEFINITIONS

1. Fuel On-Take System - The receiver system required to onload fuel inflight:
 - a. Probe.
 - b. Receptacle.
2. Fuel Transfer System - The tanker system to transfer fuel to the receiver aircraft:
 - a. Drogue (both Wing Pods, Hose Drogue Unit (HDU), Centreline Drogue, Buddy-Buddy Pod).
 - b. Boom.
 - c. Boom Drogue Adaptor (BDA).
3. Significant AAR event:
 - a. A dry contact for a pre-defined period.
 - b. A wet contact receiving a specified minimum amount of fuel.
 - c. (Boom operator/ARO only) Having performed an AAR contact within a specified time period.
 - d. (Heavy receiver only) AAR performed with the tanker autopilot off for a pre-defined period.
4. AAR Ground Training - The training to acquire the necessary theoretical knowledge prior to conducting AAR operations.
5. AAR Class Certification - The process is linked to the tanker class. To be deemed AAR certified on a specific tanker class, aircrew must have successfully completed ab initio training for his receiver aircraft type and certification training on that specific tanker class.
6. Currency Period - The currency process is linked to time. To be deemed current with a specific tanker class, an AAR certified individual must have undertaken a significant AAR event within the prescribed timeline. While AAR current with a specific tanker class, unsupervised AAR with other tankers of the same class is permitted.
7. Re-currency Period - Period after initial currency period where supervised training is required to become current, however a full initial training course is not necessarily required.

CHAPTER 3 CERTIFICATION AND CURRENCY PERIODS

3.1 CURRENCY AND RE-CURRENCY PERIODS

The currency validity periods for a specific tanker class or receiver class are as follows (and as depicted in Figure 1):

3.1.1 RECEIVER AIRCREW

- a. Day or night AAR currency: 180 days from the date the currency criteria are met.
- b. Day or night AAR re-currency: 180 days from the date the currency lapses.

3.1.2 BOOM OPERATOR/ARO**1. Currency Period**

- a. Day contact currency: 90 days from the date the Boom Operator/ARO meets the criteria for any receiver class applicable.
- b. Night contact currency: 180 days from the date the Boom Operator/ARO meets the criteria for any receiver class applicable.
- c. Receiver class AAR currency: 12 months from the date the Boom Operator/ARO meets the criteria for a given receiver class
- d. Rendezvous currency: 180 days from the date the tanker aircrew meets the criteria with any receiver class applicable.

2. Re-currency Period

- a. AAR re-currency: 270 days from the date currency lapses
- b. Receiver class re-currency: 180 days from the date the currency lapses.
- c. Rendezvous re-currency: 180 days from the date the currency lapses.

3.1.3 OTHER TANKER AIRCREW

1. Currency Period
 - a. AAR currency: 90 days from the date the tanker aircrew meets the criteria for any receiver class applicable.
 - b. Rendezvous: 180 days from the date the tanker aircrew meets the criteria with any receiver class applicable.
2. Re-currency Period
 - a. AAR re-currency: 270 days from the date currency lapses.
 - b. Rendezvous re-currency: 180 days from the date currency lapses.

3.2 CERTIFICATION AND RE-CERTIFICATION PERIODS

The certification validity periods for a determined tanker class or receiver class are as follows (and as depicted in Figure 1):

3.2.1 RECEIVER AIRCREW

12 months from the date the currency criteria are met.

3.2.2 BOOM OPERATOR/ARO

12 months from the date the currency criteria are met.

Exception: Receiver class certification is 18 months from the date the currency criteria are met.

3.2.3 OTHER TANKER AIRCREW

12 months from the date the currency criteria are met.

		Months																			
		1	2	3	4	5	6	7	8	9	10	11	12	13-14	15-16	17-18	19-20	21-22	23-24		
Receiver Aircrew	Initial Training	CURRENCY PERIOD						RE-CURRENCY PERIOD						DECERTIFIED							
		CERTIFIED																			
Boom Operator/ ARO		CURRENCY FOR DAY AAR CONTACT	RE-CURRENCY PERIOD										DECERTIFIED								
		CERTIFIED																			
		CURRENCY FOR NIGHT AAR CONTACT	RE-CURRENCY PERIOD						DECERTIFIED												
		CERTIFIED																			
		CURRENCY FOR RECEIVER CLASS												RE-CURRENCY PERIOD	DECERTIFIED						
		CERTIFIED																			
All Tanker Aircrew		CURRENCY FOR RENDEZVOUS	RE-CURRENCY PERIOD						DECERTIFIED												
		CERTIFIED																			
Other Tanker Aircrew		CURRENCY FOR AAR	RE-CURRENCY PERIOD										DECERTIFIED								
		CERTIFIED																			

Figure. 1. Certification and Currency validity

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CHAPTER 4 RECEIVER AIRCREW

4.1 UNSUPERVISED RECEIVER AAR ACTIVITY

4.1.1 CONDITIONS

AAR activity is authorised between assets of different nations when all these conditions are met:

1. The receiver aircrew is/are current on the corresponding tanker class (Currency implies Certification).
2. Aircrew reviewed the relevant ground briefing material, placing importance on reviewing the tanker's details published in the appropriate National SRD. Attention must be paid to the tanker's visual references in addition to applicable notes, warnings and cautions that aid safe AAR.

4.1.2 DAY ONLY CURRENCY

Unsupervised AAR activity may be restricted by a national policy requiring day only AAR operations. Night currency criteria can therefore be disregarded.

4.2 SUPERVISED RECEIVER AAR ACTIVITY

4.2.1 AAR INSTRUCTOR PILOT LOCATION

When supervising AAR activity, the AAR Instructor Pilot should, ideally, deliver the flight training from one of the following locations (listed in their order of preference):

1. Dual Control Aircraft. The AAR Instructor Pilot should be seated in a dual control receiver aircraft with the student seated at the other controls.
2. In Formation with the Tanker and Receiver. When a dual control aircraft is unavailable, the AAR Instructor Pilot should be in a similar aircraft, positioned in the echelon left or echelon right position with the tanker.
3. On Board the Tanker. If the AAR Instructor Pilot is unable to occupy either a dual control aircraft or another aircraft in formation with the tanker and receiver, they may instruct from aboard the tanker platform. In such an event, the AAR Instructor Pilot must be able to observe the receiver student when manoeuvring close to, and in contact with, the fuel transfer system. Importantly, the AAR Instructor Pilot must be

able to offer immediate comment and advice over the radio to the student. This position should only be used if the receiver AAR instructor pilot deems the position provides sufficient information for receiver instruction.

4.2.2 INITIAL OR RE-CERTIFICATION AAR TRAINING

1. When conducted between different nations, has to be supervised by a current receiver AAR instructor pilot in the corresponding tanker class.
2. The minimum in-flight conditions for all AAR training events are published in ATP-3.3.4.2. Chapter 2, Section I for Fixed Wing receivers; Chapter 3, Section II for Rotary Wing receivers and Chapter 4, Section II for Tilt Rotor. Participants may specify more restrictive flying limits.

4.2.3 RE-CURRENCY AAR TRAINING

1. When conducted between different nations, has to be supervised by a current receiver AAR pilot in the corresponding tanker class.
2. The minimum in-flight conditions for all AAR training events are published in ATP-3.3.4.2. Chapter 2, Section I for Fixed Wing receivers; Chapter 3, Section II for Rotary Wing receivers and Chapter 4, Section II for Tilt Rotor. Participants may specify more restrictive flying limits.

4.3 CURRENCY TRAINING

1. Applicable to aircrews in order to maintain AAR currency on a specified tanker class and fuel transfer system.
2. Aircrew being current implies the authority to undertake unsupervised AAR activity with all tankers within the same tanker class (see Table 1).
3. When planning to refuel from a tanker within the same tanker class, a significant point to emphasize during the pre-flight ground brief is the visual aspect/picture/references of the tanker. Also review applicable rendezvous procedures.

4.4 CURRENCY RESETTING NOTES

1. Night currency AAR events resets day currency however day currency AAR does not reset night currency.
2. For receiver aircrew with probe fuel on-take system, certified in both BDA and drogue fuel transfer systems, BDA AAR event resets drogue currency (Nations may be more restrictive) but drogue AAR activity does not reset BDA currency.
3. Synthetic training may be used for resetting a class currency according to National regulations.

4.5 CURRENCY CRITERIA

4.5.1 DAY CRITERIA

Minimum of one wet or dry contact within 180 days with either:

1. Transfer a minimum amount of fuel:
 - a. 200kg (500lb) for fighter and Rotary Wing/Tilt Rotor.
 - b. 450kg (1000lb) for heavy.
2. Sustain a dry contact at least for 1 minute (5 minutes for heavy).

4.5.2 NIGHT CRITERIA

1. Minimum of one wet or dry contact within 180 days with either:
 - a. Transfer a minimum amount of fuel:
 - (1) 200kg (500lb) for fighter and Rotary Wing/Tilt Rotor.
 - (2) 450kg (1000lb) for heavy.
 - b. Sustain a dry contact at least for 1 minute (5 minutes for heavy).

4.6 RE-CURRENCY TRAINING CRITERIA

Applicable to aircrews whose currency in a specific tanker class has lapsed IAW the time periods stated in paragraph 3.1.1.

4.6.1 TRAINING SUPERVISION

An AAR qualified pilot must supervise re-currency training as described in paragraph 4.2.1 above; and deliver the training IAW the conditions also specified in paragraph 4.2.2 above.

4.6.2 DAY RE-CURRENCY CRITERIA

1. AAR ground training review.
2. Minimum of one day AAR sortie flown with a current AAR qualified pilot seated (ideally) as follows:
 - a. Rear seat in tandem seat aircraft (with dual controls if available).
 - b. Non-handling pilot seat in side-by-side cockpit (with dual controls if available).
 - c. For single-seat platforms (when no two-seat variant available) in another platform in formation.
3. The re-currency pilot must achieve:

A minimum of one safe contact with either (1) or (2). May be accomplished with tanker auto-pilot off (only for those tanker / receiver nations that permit AAR with the tanker autopilot off):

- a. Transfer a minimum amount of fuel:
 - (1) 200kg (500lb) for fighter and Rotary Wing/Tilt Rotor.
 - (2) 450kg (1000lb) for heavy.
- b. Sustain a dry contact at least for 1 minute (5 minutes for heavy).

4.6.3 NIGHT RE-CURRENCY CRITERIA

1. AAR ground training review (night specific aspects).
2. Minimum of one night AAR sortie flown with a current AAR qualified pilot seated (ideally) as follows:
 - a. Rear seat in tandem seat aircraft (with dual controls if available).
 - b. Non-handling pilot seat in side-by-side cockpit (with dual controls if available).
 - c. For single-seat platforms (when no two-seat variant available) in another platform in formation.
3. The re-currency pilot must achieve:

A minimum of one safe contact with either (1) or (2). May be accomplished with tanker auto-pilot off (only for those tanker / receiver nations that permit AAR with the tanker autopilot off):

- a. Transfer a minimum amount of fuel:
 - (1) 200kg (500lb) for fighter and Rotary Wing/Tilt Rotor.
 - (2) 450kg (1000lb) for heavy.
- b. Sustain a dry contact at least for 1 minute (5 minutes for heavy).

4.7 RECEIVER AAR TRAINING OPTIONS.

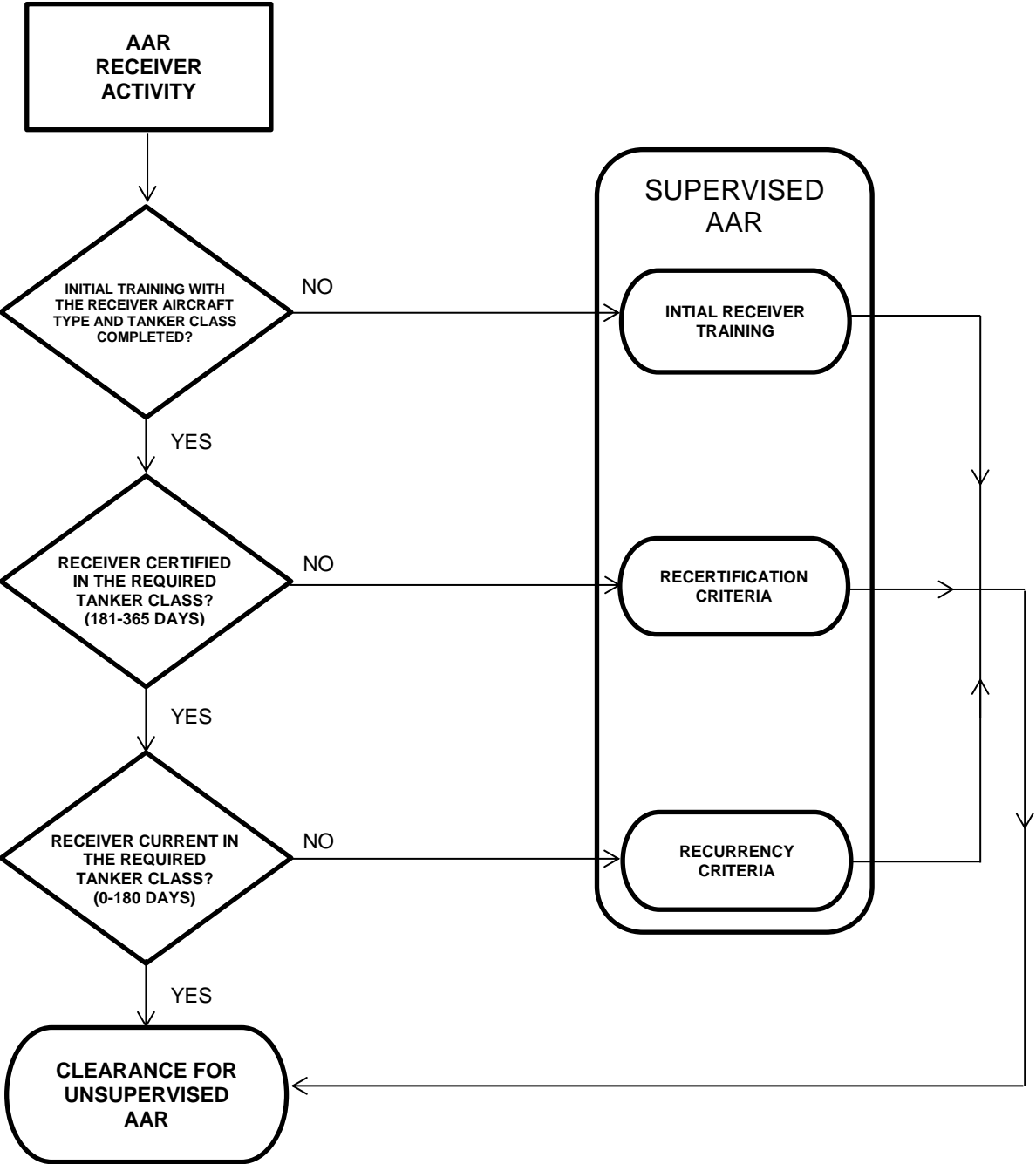


Figure 2: Receiver AAR Training Options

CHAPTER 5 BOOM OPERATOR/AIR REFUELLING OPERATOR
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5.1 UNSUPERVISED AAR ACTIVITY**5.1.1 CONDITIONS**

1. AAR activity is authorized between assets of different nations when all these conditions are met:
2. The boom operator/ARO is/are current on the corresponding receiver class (Currency implies Certification).
3. Boom operator/ARO reviewed the relevant ground briefing material, placing importance on reviewing the receiver's details published in the appropriate National SRD. Attention must be paid to the visual references in addition to applicable notes, warnings and cautions that aid safe AAR.

5.1.2 DAY ONLY CURRENCY

Unsupervised AAR activity may be restricted by a National policy requiring day only AAR operations. Night currency criteria can therefore be disregarded.

5.2 SUPERVISED AAR ACTIVITY

Initial or re-certification or re-currency AAR training

1. When conducted between different nations, has to be supervised by a current boom operator/ARO instructor in the corresponding receiver class.
2. The minimum in-flight conditions for all AAR training events are published in ATP-3.3.4.2. Chapter 2, Section I for Fixed Wing receivers; Chapter 3, Section II for Rotary Wing receivers and Chapter 4, Section II for Tilt Rotor. Participants may specify more restrictive flying limits.

5.3 CURRENCY TRAINING

1. Applicable to aircrews in order to maintain AAR currency on a specified receiver class and fuel transfer system.
2. Aircrew being current implies the authority to undertake unsupervised AAR activity with all receivers within the same receiver class and the appropriate fuel transfer system. (See Table 2).
3. When planning to refuel a receiver within the same receiver class, a significant point to emphasize during the pre-flight ground brief is the visual aspect/picture/references.

5.4 CURRENCY RESETTING NOTES

1. Night currency AAR events resets day currency however day currency AAR may not reset night currency.
2. Synthetic training may be used for resetting a class currency according to national regulations.
3. Contact made with a boom fuel transfer system does not reset the contact requirement for a drogue or BDA fuel transfer system if certified on different systems, and vice versa.

5.5 CURRENCY CRITERIA

5.5.1 DAY CURRENCY CRITERIA

1. One contact within:
 - a. 90 days from any receiver class applicable.
 - b. 12 months for each receiver class applicable.
2. Two different rendezvous types within 180 days. (if applicable)

5.5.2 NIGHT CURRENCY CRITERIA

1. One contact within:
 - a. 180 days from any receiver class applicable.

5.6 RE-CURRENCY TRAINING CRITERIA

Applicable to boom operators/AROs whose currency has lapsed IAW the time periods stated in paragraph 3.1.2.

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CHAPTER 6 OTHER TANKER AIRCREW

NOTE: For tanker platforms without a designated boom operator/ARO, the aircrew controlling the AAR equipment will comply with CHAPTER 5 criteria.

6.1 UNSUPERVISED TANKER AAR ACTIVITY

6.1.1 CONDITIONS

AAR activity is authorised between assets of different nations when all these conditions are met:

1. The tanker aircrew is/are current on the corresponding receiver class (Currency implies Certification).
2. Tanker aircrew reviewed the relevant ground briefing material, placing importance on reviewing the receiver details published in the appropriate National SRD. Attention must be paid to the relevant rendezvous procedures in addition to applicable notes, warnings and cautions that aid safe AAR.

6.1.2 DAY ONLY CURRENCY

Unsupervised AAR activity may be restricted by a national policy requiring day only AAR operations. Night currency criteria can therefore be disregarded.

6.2 SUPERVISED TANKER AAR ACTIVITY

Initial or re-certification or re-currency AAR training

1. When conducted between different nations, has to be supervised by a current AAR instructor pilot in the corresponding receiver class.
2. The minimum in-flight conditions for all AAR training events are published in ATP-3.3.4.2. Chapter 2, Section I for Fixed Wing receivers; Chapter 3, Section II for Rotary Wing receivers and Chapter 4, Section II for Tilt Rotor. Participants may specify more restrictive flying limits.

6.3 CURRENCY TRAINING

1. Applicable to tanker aircrew in order to maintain AAR currency on a specified receiver class and fuel transfer system.
2. Tanker aircrew being current implies the authority to undertake unsupervised AAR activity with all receivers within the same receiver class (see Table 2).
3. When planning to refuel with a receiver within the same class, a significant point to emphasize during the pre-flight ground brief the applicable rendezvous procedures.

6.4 CURRENCY RESETTING NOTES

Synthetic training may be used for resetting a class currency according to National regulations.

6.5 CURRENCY CRITERIA

1. One significant AAR event within 90 days with any receiver class applicable.
2. Two different rendezvous types within 180 days.

6.6 RE-CURRENCY TRAINING CRITERIA

Applicable to tanker aircrew whose currency has lapsed IAW the time periods stated in paragraph 3.1.3.

6.6.1 TRAINING SUPERVISION

An AAR qualified instructor pilot must supervise re-currency training and deliver the training IAW the conditions also specified in paragraph 6.2.

CHAPTER 7 GROUND TRAINING CRITERIA

7.1 RECEIVER THEORETICAL KNOWLEDGE AND BRIEFINGS

1. Refuelling system – operation and controls
2. Review of appropriate fuel transfer system (i.e. Boom/BDA/Probe and Drogue)
3. Review tanker visual references (see appropriate tanker National SRD in ATP-3.3.4.2)
4. Applicable ATP-3.3.4.2 Procedures:
 - a. AAR Terminology
 - b. Communication Procedures:
 - (1) Radio Communications
 - (2) Silent Procedures/EMCON
 - c. RV Procedures
 - d. Safety Procedures to include (as appropriate):
 - (1) Weapons/Emissions Check
 - (2) Joining including Formation Disposition around the Tanker
 - (3) Manoeuvring around the Tanker
 - (4) Closure limitations
 - (5) Power/throttle control
 - (6) Potential handling difficulties that may be experienced during refuelling
 - (7) Separating the AAR formation
 - (8) Wake Turbulence
 - (9) Emergency Actions, to include:
 - (a) Loss of Visual Contact
 - (b) BREAKAWAY

- (c) Disorientation
- e. Receiver Formations: Awaiting AAR, Echelon Left, Astern, and Echelon Right (Post AAR)
- f. Tanker Aircraft Orientation
 - (1) Review Standards-Related Document
 - (a) Confirm Tanker is cleared to refuel Receiver (see Tanker Nation's SRD)
 - (b) Identify Tanker RV Aids
 - (c) RV Speeds and Heights
 - (d) Signal Lights
 - (e) Silent Procedures
 - (2) Review Refuelling Envelope and Tanker Visual References
- 5. Receiver Aircraft AAR Checklist
 - a. Pre-AAR
 - b. During AAR
 - c. Post-AAR
 - d. Abnormal AAR Checklist
- 6. Operating Airspace ATC Regulations
- 7. Night AAR

In the case of Night AAR, knowledge and briefing should also include:

- a. Lighting:
 - (1) Tanker External Lighting
 - (2) Receiver Lighting (including receptacle or probe lights)
 - (3) Safety to include visual illusions and stars

7.2 TANKER THEORETICAL KNOWLEDGE AND BRIEFINGS

1. Refuelling system – operation and controls
2. Review of appropriate fuel transfer system(s) (i.e. Boom/BDA/Probe and Drogue)
3. Review receiver visual references (see appropriate National SRD in ATP-3.3.4.2)
4. Applicable ATP-3.3.4.2 Procedures:
 - a. AAR Terminology
 - b. Communication Procedures:
 - (1) Radio Communications
 - (2) Silent Procedures/EMCON
 - c. RV Procedures
 - d. Safety Procedures to include (as appropriate):
 - (1) Weapons/Emissions Check
 - (2) Formation handling
 - (3) Closure limitations
 - (4) Power/throttle control
 - (5) Potential handling difficulties that may be experienced during refuelling
 - (6) Separating the AAR formation
 - (7) Wake Turbulence
 - (8) Emergency Actions, to include:
 - (a) Loss of Visual Contact
 - (b) BREAKAWAY
 - (c) Disorientation

- (9) Use of autopilot
 - e. Receiver Formations: Awaiting AAR, Echelon Left, Astern, and Echelon Right (Post AAR)
 - f. Receiver Aircraft Orientation
 - (1) Review Standards-Related Document
 - (a) Confirm Tanker is cleared to refuel Receiver (see Tanker Nation's SRD)
 - (b) Identify RV Aids
 - (c) RV Speeds and Heights
 - (d) Signal Lights
 - (e) Silent Procedures
 - (2) Review Refuelling Envelope and Receiver Visual References
5. Tanker Aircraft AAR Checklist
- a. Pre-AAR
 - b. During AAR
 - c. Post-AAR
 - d. Abnormal AAR Checklist
6. Review any Receiver National Specific AAR or Operating Airspace ATC Regulations
7. Night AAR

In the case of Night AAR, knowledge and briefing should also include:

- a. Lighting:
 - (1) Tanker External Lighting
 - (2) Receiver Lighting (including receptacle or probe lights)
 - (3) Safety to include visual illusions and stars

INTENTIONALLY BLANK

ATP-3.3.4.2.2(A)(1)