ARSAG

AERIAL REFUELING SYSTEMS ADVISORY GROUP

Guidance document

Aerial Refueling Systems Incident Investigation Guide

Document Number 50-17-19
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14. ABSTRACT
Aerial Refueling (AR) incidents, such as boom nozzle strikes outside the receptacle, drogue slaps to fuselage or canopy, and probe/basket separations often go unreported because the damage does not meet the services' safety reporting thresholds. This document is intended to provide some basic guidelines on the gathering of information from such non-reportable AR incidents, but is not intended to be used for formal investigations of accidents or mishaps. Data for such investigations should be obtained from, but not limited to, aircraft AR configurations/ design, procedure, documentation, aircraft flight data recorder (FDR), pilot and boomer narratives, and historical maintenance. The document has four major sections to solicit investigative questions relevant to boom-equipped tanker, receptacle-equipped receiver, drogue-equipped tanker (including the Boom Drogue Adapter), and probe-equipped receiver aircraft. Each question addresses critical information that should be collected for investigation into an aerial refueling incident between the tanker and receiver aircraft. There are also sections to provide guidance on types of agreements between program offices and repository proposals to access the data for future designs.

15. SUBJECT TERMS
AR, Aerial Refueling; A/C, Aircraft; PIF, Project Initiation Form; PO Program Office; SRD, Standards Related Document; UTC, Universal Coordinated Time; FDR, Flight Data Recorder (See Pages 13 and 14 of the document for additional terms.)

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
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RECORD OF REVISIONS

REVISION	*DATE*	*REASON FOR REVISION*

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1.0 SUMMARY

The scope of this document is intended to provide some basic guidelines on the gathering of information from non-reportable Aerial Refueling (AR) incidents, such as boom nozzle strikes outside the receptacle, drogue slaps to fuselage or canopy, and probe/basket separations. It is not intended to be used for formal investigations of accidents or mishaps.

Aerial Refueling (AR) incidents, such as boom nozzle strikes outside the receptacle, drogue slaps to fuselage or canopy, and probe/basket separations, often go unreported because the damage does not meet the services' safety reporting thresholds. Following an analysis to investigate the aerodynamic interactions between a tanker and receiver during AR activities, the KC-135 Program Office submitted an ARSAG Workshop / JSB Project Initiation Form (PIF) to establish guidance for collecting recommended receiver/tanker flight data, configuration identification, maintenance data, and component evaluation criteria required for effective investigation of aerial refueling incidents. Subsequently, ARSAG/Joint Standardization Board (JSB) Workshop Group 4: Maintenance and Ground Support Equipment, was assigned the PIF, to create a guide document to support aerial refueling incident data collection to inform investigations.

Data for such an investigation should be obtained from, but not limited to aircraft AR configurations/design, procedure, documentation, aircraft flight data recorder (FDR), pilot and boomer narratives, and historical maintenance. This document has four major sections to solicit investigative questions relevant to boom-equipped tanker, receptacle-equipped receiver, drogue-equipped tanker (including the Boom Drogue Adapter), and probe-equipped receiver aircraft. Each question addresses critical information that should be collected for investigation into an aerial refueling incident between the tanker and receiver aircraft. There is also a section to provide guidance on types of agreements required post event to secure successful data retrieval and analysis from both tanker and receiver program offices. Finally, the document provides repository proposals to access past event data for future designs. The intent of this document is to tie the collection of incident reporting from Tanker operations, Receiver operations, Maintenance, and Investigation organizations into a single document.

ARSAG is a recommending body that only generates ARSAG's documents and, therefore, cannot dictate equipment and procedural requirements. The eventual use of the document by other organizations is not under ARSAG's control. ARSAG is charted by the US Defense Standardization Office (DSPO) as the Joint Standardization Board (JSB) for Aerial Refueling Systems. Through its work with the Department of Defense's (DoD) USA Services and ARSAG Workshops / JSB and their interface with NATO, it is ultimately desired that this document will serve as a foundation for the future development of an incident investigation section for Allied Tactical Publication (ATP) 3.3.4.2. The path to ATP-3.3.4.2 will be to first promulgate this document as a Standards Related Document (SRD) and then move it into ATP-3.3.4.2.

PROJECT INITIATION FORM (PIF)

Items 1 through 3 to be Completed by Requester								
1. PROJECT SPONSOR OR INITIATING AGENCY								
Name of Individual:	**Scott Lasiter**							
Name of Organization:	**AFLCMC/WKDA**							
POC Information:	**Phone**	**(405) 739-5438**	**E-mail**	**scott.lasiter@us.af.mil**				
2. PROJECT REQUEST								
Project Purpose:	Establish guidance for collecting recommended receiver/tanker flight data, configuration identification, maintenance data, and component evaluation criteria required for effective investigation of event mishap. Data for investigation includes (not limited to) aircraft AR configurations/design, procedure, documentation, aircraft flight data (FDR), pilot and boomer narratives, and historical maintenance. The document should also provide guidance on types of agreements required post event to secure successful data retrieval and analysis from both tanker and receiver program offices. Finally, it should provide repository proposals to access past event data for future designs.							
Proposed Project Title:	Operational (Receiver/Tanker) Incident Investigation Guidance Document							
Proposed Product Outcome: (Mark with X)	**ARSAG Document:**	**Guide Document**			**Recommendation Letter**			
		X			**X**			
	Input to DoD Standardization Document:	**Specification**		**Standard**		**JSSG**	**Other**	
				X		**X**	**DTIC**	
	Input to NATO Document:	**STANAG**	**STANREC**		**Allied Publication**			
			X		**SRD**			
	Input to Industry Document:	**Standard**			**Other**			
3. PROJECT TIMELINE								
Project Request Submittal Date:	**Date**	**8 Feb 17**						
Requested Completion Date:	**Date**	**Feb 18: First phase release for: Probe/Drogue/Boom receptacle equipped A/C. Other equipment phase releases if available. Use phased approach using revisions to add equipment releases.**						

Item 4 to be Completed by ARSAG			
4. PROJECT DISPOSITION			
Project Request Receipt Date:8 Feb. 2017		**9 February 2017**	
Approved as ARSAG Project * Feb. 2017		**JSB Chair: David Benson**	
		JSB Deputy Chair: Farhad Choudhury	
Declined as ARSAG Project			
ARSAG Executive Director			
Approved as ARSAG Project		**Dex H. Kalt**	
Declined as ARSAG Project			
If declined, rationale			
Priority Assessment:	**No. 1**	**Project Assignment No.**	**50-17-17WD**
Working Group Assignment:		**Group 4 Lead: Gregory Twyford; Document Manager: Scott Yerxa**	
Official ARSAG Response to Project Sponsor or Initiating Agency: Date			**9 February 2017**
Transition to ARSAG/JSB Working Group: Date			**9 February 2017**

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Scott Yerxa	Boeing	Nic Barnes	RAAF
John Gomez	Pratt & Whitney	Paul Pillar	Boeing
Stephen Jones	Pratt & Whitney		

3.0 REFERENCES

N°	TITLE	REFERENCE	ISSUE	DATE	SOURCE
1.	ATP-3.3.4.2 Air to Air Refueling ATP-56		Edition C, Version 1	Nov 13	JAPCC/ AARWG
2.	AR Equipment Reference Guide To Be Re numbered to new PIF				
3.					

4.0 ASSOCIATED DOCUMENTS

DOCUMENT TITLE	*ATP & ARSAG DOCUMENT NO*	*ISSUE & DTIC NO.*	*DATE NATO DOC.*	*NATO RELATED DOCUMENT*
1. Air to Air Refueling ATP-56	ATP 3.3.4.2	Edition C, Version 1	Nov 2013	JAPCC
2. AR Equipment Reference Guide	12-06-19WD	In Work	N/A	N/A
3. Aerial Refueling Equipment: Probe-Drogue Interface Characteristics STANAG 3447	ATP 3.3.4.6 & 01-98-14R NEW NO. 57-18-19WD	Revision in work No AD no, yet	30 Apr 2014 or latest published Document	JAPCC May 14
4. Aerial Refueling Boom-Receptacle Systems and Interface Requirements*	02-88-12R	AD1053142	14 Feb 11	JAPCC Apr 11
5. Aerial Refueling Pressure: Definitions and Terms, Design and Verification Guidance	03-00-03R-2	AD1025801	17 Aug 16	JAPCC Jan 17
6. Aerial Refueling Probe/Drogue / System Guide	04-06-18	AD1064517	15 Oct 2018	N/A
7. Standardized Technical Data Survey (STDS) for Aerial Refueling	17-81-03R-3	AD1027954	11 Sep 16	JAPCC Feb 17
8. Aerial Refueling Boom/Receptacle Guide	20-08-17	AD1048313	9 Mar 16	JAPCC Sep 17
9. Aerial Refueling Test Methods Guide	41-09-15	AD1030015	8 Sep 16	JAPCC Mar 17
10. Aerial Refueling Clearance Process Guide & AR Clearance Compatibility Assessment Checklist	43-08-14	AD 1025796	31 Jan '17	SRD attachment to NATO ATP 3.3.4.2 Edition C (formerly ATP-56)
11. Aerial Refueling Lighting Study (UDR)/USAF)	UDRI / USAF	AD1051415	19 Sept 2005	N/A

5.0 ABBREVIATIONS AND TERMINOLOGY

AARWG	Air to Air Refueling Working Group
A/C	Aircraft
ASMIS	Aviation Safety Management Information System
AR	Aerial Refueling
ASR	Aviation Safety Report
AFLCMC	Air Force Life Cycle Management Center
ARSAG	Aerial Refueling Systems Advisory Group
ASAP	Aviation/Airman Safety Action Program
ATP	Allied Tactical Publication
BDA	Boom Drogue Adapter
Boom	A rigid housing that is maneuverable in both the lateral and vertical axis, which encompasses a telescoping tube that an operator on the tanker aircraft can extend and insert into a receptacle on the aircraft being refueled.
CFD	Computational Fluid Dynamics
CONOPS	Concept of Operations
DoD	Department of Defense
Drogue	Part of the aerial refueling system that stabilizes the hose in flight and provides a funnel to aid insertion of the receiver aircraft probe into the hose.
DTIC	Defence Technical Information Center
FAA	Federal Aviation Administration
FDR	Flight Data Recorder
GSE	Ground Support Equipment
HAZREP	Hazard Reporting
Incident	An occurrence other than an accident associated with operation of an aircraft, which affects, or could affect, safety of operations (FAA).
Initiator	An individual with an AR background, whose assigned role is to lead the investigation, or data collection activity for an investigation.
JAPCC	Joint Air Power Competence Center
JSB	DOD Joint Standardization Board for Aerial Refueling Systems
NATO	North Atlantic Treaty Organization
NVIS	Night Vision Instrumentation System

PIF	Project Initiation Form
PO	Program Office
POC	Point of Contact
Probe/Mast	Method in which a receiver A/C may receive fuel from a hose/ drogue equipped tanker.
RAAF	Royal Australian Air Force
RAF	Royal Air Force
SRD	Standard Related Document
STANAG	Standardized Agreement
USAF	United States Air Force
USN	United States Navy
UARRSI	Universal Aerial Refueling Receptacle Slipway Installation
UARRSI/ Receptacle	Method in which a receiver A/C may receive fuel from a boom equipped tanker.
UTC	Coordinated Universal Time
WD	Draft Working Document in ARSAG, Not Published yet.

6.0 INTRODUCTION

AR incidents, such as boom nozzle strikes outside the receptacle, drogue slaps to fuselage or canopy, and probe/basket separations, often go unreported because the damage does not meet the services' safety reporting thresholds. They are, however, no less important to the agencies involved; but, without a process to collect valuable information surrounding these incidents, ensuing investigations have proven quite difficult.

In an attempt to mitigate such incidents, the KC-135 Program Office and the USAF Engineering Branch, Air Force Life Cycle Management Center (AFLCMC), performed an analysis to investigate the aerodynamic interactions between a tanker and receiver during AR activities. The analysis considered the flow fields around the tanker and receiver aircraft during flight. Utilizing computational fluid dynamics (CFD), they discovered the interaction between the two aircraft to be dependent on many factors, including the receiver's bow-wave characteristics, gross weight, and both approach and refueling positions.

Flight test programs were later completed by the KC-135 Program Office, where they learned the receiver's bow-wave did indeed affect the tanker's aerodynamics by inducing pitch oscillations. As the receiver coupled to the tanker and adjusted pitch angle to maintain the AR envelope, it imparted forces which disturbed the tanker's pitch angle. The tanker pilot, or its autopilot, then reacted to correct the pitch angle, which imparted a reaction force and disturbed the receiver's pitch angle; thus producing the "dance" cycle between the two aircraft. In the cases of both contact-uncoupled and contact-coupled AR, it was found the tanker's gross weight and center of gravity attributed to the amplitude of the oscillations. It was concluded that the tanker, at a low gross weight and aft center of gravity configuration, provided the worst case in terms of AR performance.

As a result of this analysis, the KC-135 Program Office identified a need to record information pertaining to such incidents and submitted a Project Initiation Form (PIF) to establish guidance for collecting recommended receiver/tanker flight data, configuration identification, maintenance data, and component evaluation criteria required for effective investigation of aerial refueling incidents.

Subsequently, ARSAG recognized the need for standardization of AR incident reporting and data collection to ensure effective corrective measures can be implemented in an effort that reduces or eliminates future incident occurrences. Likewise, ARSAG aims to lead industry and the services in guiding the standardization of incident reporting and data collection. To achieve this goal, ARSAG/JSB Workshop Group 4: Maintenance and Ground Support Equipment, was assigned the PIF, to create a guide document to support aerial refueling incident data collection to inform investigations. The potential goal of this document is to produce a new chapter in ATP 3.3.4.2 (ATP-56 - Air to Air Refueling CONOPS). However, given that an investigation guidance document currently does not exist, and that many countries may not have their own investigation procedures, ARSAG is determined to submit the attached recommendations for NATO to create an SRD with two goals in mind:

Guide actions from all parties involved, following an AR incident, with the goal of reducing or eliminating future incident occurrences;

Stimulate all nations conducting aerial refueling to think about how AR incident data should be collected and what their role in it can be (tanker or receiver).

ARSAG understands that multiple documents may be created by employing the recommendations in this ARSAG Guidance Document, Aerial Refueling Incident Investigation and/or updated in order for AR incident investigation to become a reality. The

goal in producing this document is to allow a quick process for development of AR incident investigation documents, e.g. a NATO SRD document.

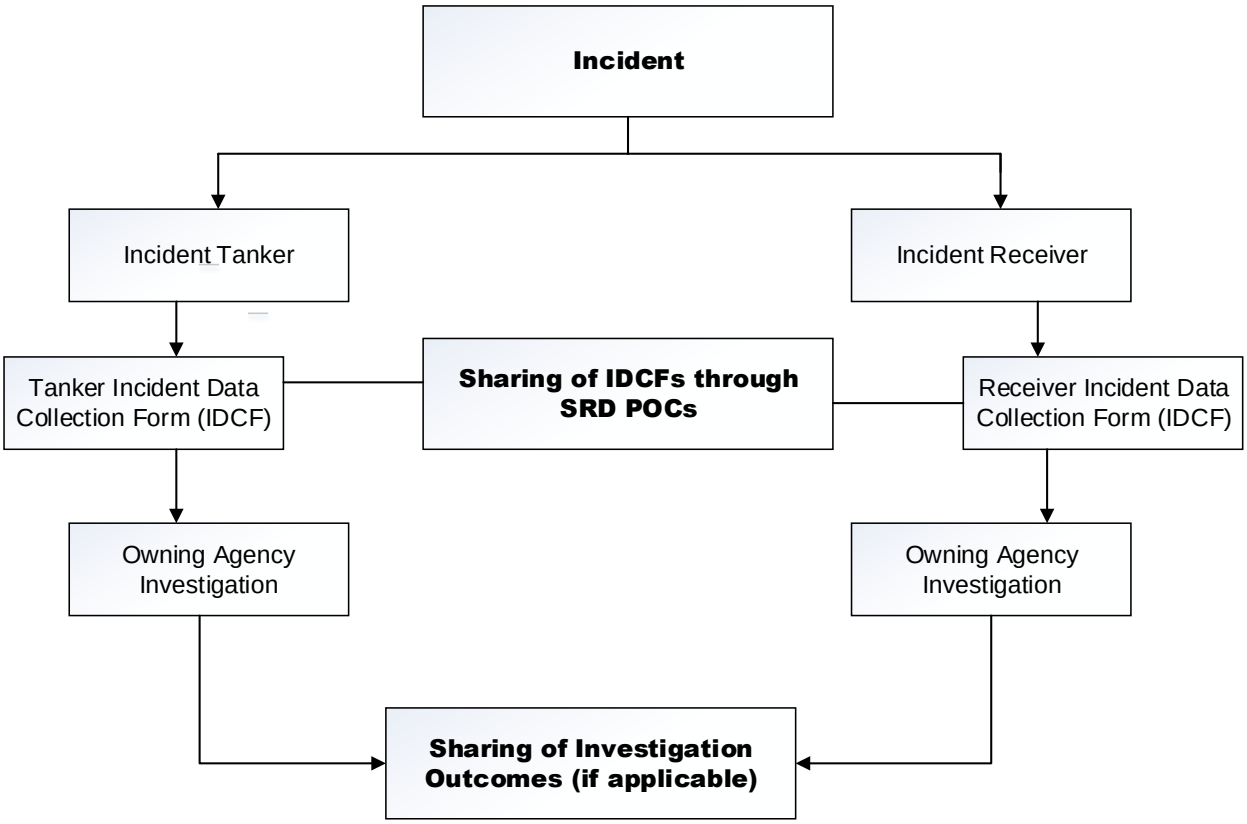
This document addresses the international aerial refueling community's vision as it relates to common procedures for collecting evidence, investigating and reporting AR incidents involving two or more aerial vehicles, but primarily, the tanker and the receiver aircraft. It is essential to collect and record the following flight data parameters to determine the expected, and/or analyze the aerodynamic interactions between a tanker and receiver: airspeed, altitude, gross weight, center of gravity, accelerations (vertical, lateral, and longitudinal), pitch and roll attitude, boom-receptacle or probe/drogue engagement, autopilot engagement, and AR mode engagement (if applicable). Also, aircraft configuration and operating parameters, such has boom length, AR closure rate, and atmospheric conditions, are also significant data to record.

The document has four major sections to solicit investigative questions relevant to boom-equipped tanker, receptacle-equipped receiver, drogue-equipped tanker (including the BDA), and probe-equipped receiver aircraft. Each question addresses critical factors involving investigation into an aerial refueling incident between the tanker and receiver aircraft. It also provides guidance on types of agreements required post event to secure successful data retrieval and analysis from both tanker and receiver program offices. Finally, the document provides repository proposals to access past event data for future designs.

ARSAG is a recommending body and therefore cannot dictate equipment and procedural requirements. However, through its work with the DoD USA Services and ARSAG's JSB, and their interface with NATO, ultimately it is desired that this document will serve as a foundation for the future development of an incident investigation section for ATP 3.3.4.2. The path to ATP-3.3.4.2 will be to first promulgate this document as an SRD and then moving it into ATP-3.3.4.2.

7.0 General Instructions

7.1 In the event of an AR incident, the affected Program Office (PO), or investigative agency, may initiate the appropriate Incident Data Collection Form(s) in this document to collect pertinent data necessary for conducting an effective investigation. Government and/or contractor technical evaluators may be involved in the investigation. The flowchart below depicts the nominal process for data collection.



7.2 The initiator shall identify the report naming convention and save the document accordingly to ensure relevant information can be effectively stored and tracked in the system.

7.3 The initiator may record as much general information as possible (see section 8.0 for Initiator's Incident Data Collection Form), with respect to the aircraft/company/ organization involved in the incident, utilizing available resources such as aircraft operations and/or maintenance technical data, the AR Equipment Reference Guides, aircraft flight data recorder (FDR), AR Clearance Process Guide & AR Clearance Compatibility Assessment Checklist, etc.

7.4 The initiator may query the affected company/organization's safety program office to obtain any relevant data pertaining to the incident (i.e. USAF ASAP or USN HAZREP reports).

7.5 The initiator should request that the company/organization(s) affected by the incident answer any remaining questions listed in this guidance document.

7.6 The forms in this document are subdivided into relevant sections: initial investigation information, which the initiator may collect; incident aircrafts' roles, for ease of collecting receiver aircraft pilot/crew and tanker boom operator/crew narratives; historical maintenance actions; etc.

7.7 When questions involve units of measure, request they be identified for each numbered response. United States units of measure or both US & metric units. Should be consistent throughout the document to avoid confusion. When differences exist they should be clearly identified.

7.8 If the incident is not captured within the questionnaire, or space is insufficient, use additional sheets.

7.9 Label any attachments in accordance with the appropriate sections.

7.10 When available data is not easily transformed into the ARSAG guidance document's format, submit data in the as available format and describe the data parameters.

7.11 The use of ARSAG documents in the reference section herein would be most useful to the organizations in conducting the investigation. In some small incident investigations, many of the questions may be unnecessary and cause the crew to be reluctant to report the incident. In these situations it would be helpful for the initiator to identify which questions should be answered.

7.12 Those completing this document should be knowledgeable of the incident and/or the affected aircraft's AR system maintenance records (i.e. aircrew, ground crew, system program office, etc.). Specific details of any AR incident should be obtained from both tanker A/C and receiver A/C crews to ensure that all related factors are considered in the investigation.

7.13 When the document questions are not clear and/or do not specifically address a significant feature, which the informant determines a need to address, request they shall correct the form as required and fill in the information.

7.14 Before and/or when completed, this questionnaire may require special access control and/or military classification. The company/organization and/or country filling in the data should identify that control information to the recipients of the completed document.

7.15 A final report with conclusions and recommendations should be coordinated with the responsible parties and issued for each incident investigation. As such, the initiator shall determine where final resolution of the incident resides (i.e. Technical, Operational, Contractor, System Program Office, etc.,) as determined by its content, if controlled information is contained in its content.

7.16 As with any questionnaire, the expertise, experience, judgment and competence of the individual(s) completing the document must be relied on and considered in their context. Evaluation of the individual(s) completing the questionnaire is beyond ARSAG's control.

8.0 Initiator's Incident Data Collection Form

This section contains questions for the initiator to collect information about the incident.

1)	Was tanker cleared IAW NATO ATP3.3.4.2 Ed C Ver. 1 for aerial refueling with receiver aircraft? If so,	Click here to enter text.
	a) What agency/agencies were involved in obtaining/issuing the clearances?	Click here to enter text.
	b) Were ground and/or flight tests conducted?	Click here to enter text.
	c) What was the tanker/receiver clearance category: 1, 2, or 3?	Click here to enter text.
	d) Was the refueling accomplished within the constraints of these clearances?	Click here to enter text.
	e. If exceeded, was the incident a result of those restrictions being violated?	Click here to enter text.
2)	Did the clearance provide use of ARSAG Document: Aerial Refueling Clearance Process Guide, Document Number 43-08-14	Click here to enter text.
3)	Did the tanker and receiver crews involved compare observations of incident?	Click here to enter text.
	a) If so, did the observations coincide or did they differ?	Click here to enter text.
	b) If different, what methods were used to explain differences?	Click here to enter text.
	c) Were any reasons for the differences identified?	Click here to enter text.
	d) Were there any boom operator comments regarding receiver aircraft characteristics that may relate to the incident?	Click here to enter text.
	e) Were there any receiver aircraft pilot/crew comments regarding the tanker system and formation aids that may have been related to the incident?	Click here to enter text.
4)	Determine and document what policies are in place for resolving conflicts between tanker crew, receiver crew, or maintenance reports for the incident[1]. If these polices exist, were they implemented during this incident?	Click here to enter text.
5)	Prior to the incident mission, were any unusual aerial refueling circumstances documented with either Tanker or Receiver Aircraft? If so,	Click here to enter text.
	a) Obtain information concerning previous event	Click here to enter text.
	b) Identify any relationship between prior experience and current incident	Click here to enter text.

[1] An example of such policy is used within the Australian National SRD for Inadvertent Contact. The RAAF require immediate post flight notification when damage to receiver aircraft has occurred during Air Refueling with RAAF KC-30A tanker aircraft. Receiver units detecting such damage are requested to alert AMB 33SQN MISSION SYSTEMS SUPPORT (amb33sqn.mss@defence.gov.au) and AMB 33SQN Aviation Safety (amb33sqn.aviationsafetycell@defence.gov.au) as soon as practical to enable preservation of relevant flight data for safety investigation purposes. RAAF receiver units shall raise an ASR in ASMIS and notify 33SQN accordingly.

6)	Identify the role(s) of the tanker and receiver operating commands for this investigation	Click here to enter text.
7)	Has this tanker and receiver system (specific aircraft tails) experienced similar incidents in the past?	Click here to enter text.

9.0 Tanker's (Boom Equipped) Incident Data Collection Form

This section contains questions for the boom-equipped tanker aircrew/maintenance to answer with respect to information about the incident. The initiator may determine which questions, if not all, need to be answered.

9.1 Operator/Aircrew Questions

9.1.1 General Information

1)	Identify date (UTC/Zulu) of incident	Click here to enter text.
2)	Identify time (UTC/Zulu) of incident	Click here to enter text.
3)	A/C operator (e.g. USAF, RAF etc.)	Click here to enter text.
4)	A/C type	Click here to enter text.
5)	A/C tail number/serial number (Navy Bureau number, etc.)	Click here to enter text.
6)	Refueling equipment part and serial number involved in incident	Click here to enter text.

9.1.2 Incident Related

1)	Describe the incident.	Click here to enter text.
2)	Provide a description of events when the incident occurred (Please document conditions to turbulence, weather, visibility, icing etc. to define all issues or conditions).	Click here to enter text.
3)	What steps of AR procedure were being performed at time of incident?	Click here to enter text.
4)	What was A/C altitude at time of incident?	Click here to enter text.
5)	What was A/C airspeed at time of incident?	Click here to enter text.
6)	Did incident occur in day/night? If at night, was NVIS used?	Click here to enter text.
7)	If refueling took place at night, was refueling equipment illumination functioning correctly?	Click here to enter text.
8)	Were all lighting/marking formation aids active and working i.e., nozzle lighting, boom markings, pilot director lights, tanker/receiver floodlights, receptacle lighting, lead-in lighting, etc. Visible for both day, twilight, and night conditions?	Click here to enter text.
9)	If applicable, were there any remote vision system serviceability issues (i.e. loss of imagery, degradation of imagery (washout, glare, reflections, blending/loss of contrast or detail), visual illusions, and loss of depth perception)? Describe conditions and/or effects.	Click here to enter text.

10)	If so equipped, was the through-the-boom voice communication system working?	Click here to enter text.
11)	Were there any negative comments from the receiver pilot regarding the tanker systems?	Click here to enter text.
12)	Provide data with regard to A/C fuel weight and distribution at time of incident.	Click here to enter text.
13)	Was there any unusual bow wave or down wash effect before or during the incident that had an aerodynamic effect on the refueling equipment?	Click here to enter text.
14)	Was the boom stable before and during incident? If not, was any instability caused by damaged/missing parts?	Click here to enter text.
15)	What was the boom-to-receiver closure rate?	Click here to enter text.
16)	Were any fault codes identified at time of incident? If yes, what were fault codes?	Click here to enter text.
17)	What was fuel pump configuration and offload fuel rate at time of incident?	Click here to enter text.
18)	Were there any issues with ability to connect and/or disconnect from receiver (i.e. mechanical interfaces (toggles), signal system status indication, signal coil, signal amplifier, independent disconnect (when equipped), etc.)?	Click here to enter text.
19)	Were the refueling contact and disconnect control envelopes exceeded during the incident (i.e. automatic limit or rate disconnect, boom operator or receiver initiated disconnect)?	Click here to enter text.
20)	Were there any issues with flight control systems and/or stability augmentation? If Yes, provide details.	Click here to enter text.
21)	Define any and all abnormal boom response. Provide details (e.g. boom nozzle binding).	Click here to enter text.
22)	Define the fuel valves' configuration at the time of the incident	Click here to enter text.
23)	What was radio configuration at time of incident?	Click here to enter text.
24)	Were there any previous reported unusual circumstances during refueling with this receiver A/C, or any other receiver A/C?	Click here to enter text.

9.1.3 Pre-Flight Related

1)	Pre-flight check, including built-in-test if applicable: date and time performed?	Click here to enter text.
2)	During pre-flight check and built-in-test, were there any fault codes or observations made? If yes, what actions were performed to overcome these?	Click here to enter text.

3)	Pre-flight system priming, if applicable: date and time performed. Were the boom surge boots checked prior to flight, or recently, for proper pressure? (Note: The surge boots protect the tanker but also the receiver A/C.)	Click here to enter text.

9.1.4 In-Flight Related

1)	Were any power up or built in test fault codes identified? If yes, what were fault codes?	Click here to enter text.
2)	What action was taken to clear fault codes?	Click here to enter text.
3)	If applicable, was fuel system primed before AR (e.g. was system properly pressurized per operating instructions)?	Click here to enter text.
4)	During this sortie, had successful refueling been conducted with this equipment?	Click here to enter text.
5)	Were there any operating limitations/restrictions involving or relating to AR operations?	Click here to enter text.

9.2 Maintenance Questions

9.2.1 General Information

1)	Refueling equipment top level assembly part number?	Click here to enter text.
2)	Refueling equipment serial number and/or manufacturer part number?	Click here to enter text.
3)	What type of ground tests were performed to identify whether system is working correctly? Specifically, identify GSE used by part number and/or federal stock number during either previous Pre- or Post-Flight or system maintenance checks.	Click here to enter text.
4)	Date of last scheduled maintenance (for applicable equipment)?	Click here to enter text.
5)	Were there any unexpected observations made when scheduled maintenance was performed? If yes, what observations were made?	Click here to enter text.
6)	What maintenance and/or repair actions were taken as a result of the observations?	Click here to enter text.
7)	Date of last unscheduled maintenance/repair?	Click here to enter text.
8)	What was the reason for the unscheduled maintenance?	Click here to enter text.
9)	Were any parts replaced as part of this unscheduled maintenance? If yes, what parts?	Click here to enter text.
10)	What repair actions/adjustments were made?	Click here to enter text.

11)	Check maintenance records (to include historical records) and list any other related occurrences.	Click here to enter text.
12)	Are there any mandatory Service Bulletin, Airworthiness Directive (AD) or other engineering instruction not implemented on the equipment that may have a potential impact on the incident?	Click here to enter text.
13)	Are there any deferred maintenance task not implemented on the equipment that may have a potential impact on the incident?	Click here to enter text.
14)	Validate serviceability and calibration of test equipment and GSE.	Click here to enter text.

9.2.2 Pre-Flight Related

1)	Pre-flight check, including built in test if applicable: date and time performed?	Click here to enter text.
2)	During pre-flight check and built in test, were there any fault codes or observations made? If yes, what actions were performed to overcome these?	Click here to enter text.
3)	Preflight system priming if applicable: date and time performed? Reported record of boom nozzle prior to flight: pressure tested, ball joint free to move orientation of induction coil (6:00)?	Click here to enter text.
4)	Pre-flight check: pressure regulation system	

9.2.3 Post-Flight Related

1)	During post-flight inspection, what was the condition of the refueling equipment involved in the incident?	Click here to enter text.
2)	Were there any damaged, missing or additional parts found?	Click here to enter text.
3)	Provide any data from A/C (flight data recording/voice/video recording etc.) considered appropriate (e.g. airspeed, altitude, heading, system status, gross/fuel weight).	Click here to enter text.
4)	If possible, conduct power up/built-in-test or download fault code data. Provide fault codes.	Click here to enter text.
5)	What repair action was taken and what parts were replaced to make equipment serviceable? Repeat inspection as in 3) above	Click here to enter text.
6)	Post-flight check: pressure regulation system working	

10.0 Receiver's (Receptacle Equipped) Incident Data Collection Form

This section contains questions for the receptacle-equipped receiver aircrew/maintenance to answer with respect to information about the incident. The initiator may determine which questions, if not all, need to be answered.

10.1 Operator/Aircrew Questions

10.1.1 General Information

1)	Identify date (UTC/Zulu) of incident	Click here to enter text.
2)	Identify time (UTC/Zulu) of incident	Click here to enter text.
3)	A/C operator (e.g. USAF, RAF etc.)	Click here to enter text.
4)	A/C type	Click here to enter text.
5)	A/C tail number/serial number (Navy Bureau number, etc.)	Click here to enter text.
6)	Type of refueling equipment (i.e. receptacle) involved in incident? Was equipment inspected for damage?	Click here to enter text.
7)	During the fuel transfer, did the tanker operator/crew observe any fuel stream or spray at the boom/nozzle receptacle connection, fuel vents on the receiver aircraft, especially continuous?	Click here to enter text.

10.1.2 Incident Related

1)	Describe the incident.	Click here to enter text.
2)	Provide a description of events when the incident occurred (Please document conditions to turbulence, weather, visibility, icing etc. to define all issues or conditions).	Click here to enter text.
3)	What steps of AR procedure were being performed at time of incident?	Click here to enter text.
4)	What was A/C altitude at time of incident?	Click here to enter text.
5)	What was A/C airspeed at time of incident?	Click here to enter text.
6)	Did incident occur in day/night? If at night, was NVIS used?	Click here to enter text.
7)	Add receiver pilot (crew) observations of tanker formation aids, i.e.: pilot director lights, boom (telescoping tube) markings, objectionable lights (too bright) etc.	Click here to enter text.
8)	If refueling took place at night, was refueling equipment illumination functioning correctly for receiver A/C crew to observe formation cues?	Click here to enter text.
9)	Provide data with regard to A/C fuel weight and distribution at time of incident.	Click here to enter text.

10)	Was there any unusual bow wave or down wash effect before or during the incident that had an aerodynamic effect on the refueling equipment?	Click here to enter text.
11)	Was boom stable before and during incident?	Click here to enter text.
12)	What was your closure rate on the boom?	Click here to enter text.
13)	If applicable, were there any issues readying the receptacle (i.e. slipway doors)?	Click here to enter text.
14)	What was external stores configuration?	Click here to enter text.
15)	Any issues with ability to connect to and disconnect from tanker (i.e. mechanical interfaces (toggles), signal system status indication, signal coil, signal amplifier, independent disconnect (when equipped), etc.)?	Click here to enter text.
16)	Were tanker exterior formation cues as expected? If no, what were differences?	Click here to enter text.
17)	Were there any issues with flight control systems and/or stability augmentation? If yes, provide details.	Click here to enter text.
18)	Were there any issues with canopy/windscreen visibility for observing tanker formation cues?	Click here to enter text.
19)	Was there any abnormal boom or receptacle response? If yes, provide details.	Click here to enter text.
20)	What was the fuel valve configuration at the time of the incident? Identify fuel valves involved.	Click here to enter text.
21)	What was radio configuration at time of incident? Was the through-the-boom communication system functioning?	Click here to enter text.
22)	Were there any previously reported unusual circumstances during refueling with this tanker (i.e. fuel transfer, nozzle fuel spray during hook-up, during refueling transfer, or excessive fuel leakage on disconnect)?	Click here to enter text.
23)	Were the cockpit receptacle cockpit status lights functioning?	Click here to enter text.
24)	Did the receiver A/C experience any pressure disconnects during the fuel transfer? If so, was it attributed to the pressure disconnect switch? (If equipped with switch)	Click here to enter text.

10.1.3 Pre-Flight Related

1)	Pre-flight check, including built in test if applicable: date and time performed?	Click here to enter text.
2)	During pre-flight check and built in test, were there any fault codes or observations made?	Click here to enter text.

	If yes, what actions were performed to overcome these?	

10.1.4 In-Flight Related

1)	If known, had system or equipment exhibited any abnormal symptoms prior to incident or prior to refueling with other receivers with the same tanker A/C??	Click here to enter text.
2)	During this sortie, had successful refueling been conducted with this equipment? If yes, provide details of previous refueling (i.e. system recycle, number of contacts, same or different tanker, etc.) Were any other observations made?	Click here to enter text.
3)	Were there any operating limitations or restrictions involving or relating to AR operations?	Click here to enter text.

10.2 Maintenance Questions

10.2.1 General Information

1)	Refueling equipment top level assembly part number?	Click here to enter text.
2)	Refueling equipment serial number and/or manufacturer part number?	Click here to enter text.
3)	What type of ground tests were performed to identify whether system is working correctly? Specifically identify GSE used by part number and/or federal stock number during either previous Pre- or Post-Flight or system maintenance checks.	Click here to enter text.
4)	Date of last scheduled maintenance (for applicable equipment)?	Click here to enter text.
5)	Were there any unexpected observations made when scheduled maintenance was performed? If yes, what observations were made?	Click here to enter text.
6)	What maintenance and/or repair actions were taken as a result of this?	Click here to enter text.
7)	Date of last unscheduled maintenance/repair?	Click here to enter text.
8)	What was the reason for the unscheduled maintenance?	Click here to enter text.
9)	Were any parts replaced as part of this unscheduled maintenance? If yes, what parts?	Click here to enter text.
10)	What repair actions/adjustments were made?	Click here to enter text.
11)	Check maintenance records (to include historical records) and list any other related occurrences)	Click here to enter text.

12)	Are there any mandatory Service Bulletin, Airworthiness Directive (AD) or other engineering instruction not implemented on the equipment that may have a potential impact on the incident?	Click here to enter text.
13)	Are there any deferred maintenance task not implemented on the equipment that may have a potential impact on the incident?	Click here to enter text.
14)	Validate serviceability and calibration of test equipment and GSE.	Click here to enter text.

10.2.2 Pre-Flight Related

1)	Pre-flight check, including built-in-test if applicable: date and time performed?	Click here to enter text.
2)	During pre-flight check and built-in-test, were there any fault codes or observations made? If yes, what actions were performed to overcome these?	Click here to enter text.

10.2.3 Post-Flight Related

1)	During post-flight inspection, what was condition of refueling equipment? What GSE was utilized to verify aircraft malfunction that had occurred in-flight as related to this incident? Were there any noted defects, if so, what were the issues and testing results (i.e. pressure disconnect switch verified for proper operation)?	Click here to enter text.
2)	Were there any damaged, missing or additional parts found?	Click here to enter text.
3)	Provide any data from A/C (flight data recording/voice/video recording etc.) considered appropriate (e.g. airspeed, altitude, heading, system status, gross/fuel weight).	Click here to enter text.
4)	If possible, conduct any applicable tests of the refueling equipment. Provide faults found.	Click here to enter text.
5)	What repair action was taken and what parts were replaced to make equipment serviceable?	Click here to enter text.

11.0 Tanker's (Drogue Equipped) Incident Data Collection Form

This section contains questions for the hose/drogue-equipped tanker aircrew/maintenance to answer with respect to information about the incident. The initiator may determine which questions, if not all, need to be answered.

11.1 Operator/Aircrew Questions

11.1.1 General Information

1)	Identify date (UTC/Zulu) of incident	Click here to enter text.
2)	Identify time (UTC/Zulu) of incident	Click here to enter text.
3)	A/C operator (e.g. USAF, RAF etc.)	Click here to enter text.
4)	A/C type	Click here to enter text.
5)	A/C tail number/serial number (Navy Bureau number, etc.)	Click here to enter text.
6)	Refueling equipment type (i.e. wing pod, [left or right],centerline hose reel, etc.) involved in incident (include manufacture part name and part number)	Click here to enter text.

11.1.2 Incident Related

1)	Describe the incident.	Click here to enter text.
2)	Provide a description of events when the incident occurred (Please document conditions to turbulence, weather, visibility, icing etc. to define all issues or conditions).	Click here to enter text.
3)	What steps of AR procedure were being performed at time of incident?	Click here to enter text.
4)	What was A/C altitude at time of incident?	Click here to enter text.
5)	What was A/C airspeed at time of incident?	Click here to enter text.
6)	Did incident occur in day/night? If at night, was NVIS used?	Click here to enter text.
7)	If refueling took place at night, was refueling equipment illumination functioning correctly?	Click here to enter text.
8)	Were all available formation aids for the receiver pilot working properly – any negative reports by the receiver pilot/crew? Describe all malfunctions noted.	Click here to enter text.
9)	Provide data with regard to A/C fuel weight and distribution at time of incident.	Click here to enter text.
10)	Was there any unusual bow wave or down wash effect before or during the incident that had an aerodynamic effect on the refueling equipment?	Click here to enter text.
11)	Was hose and/or drogue stable before and during incident?	Click here to enter text.

	If not, was any instability caused by damaged/missing parts?	
12)	If observed, what was the receiver's closure rate on the drogue and was the receiver A/C stable during hookup?	Click here to enter text.
13)	Were any fault codes identified at time of incident? If yes, what were fault codes?	Click here to enter text.
14)	What was fuel pump configuration and offload fuel rate at time of incident?	Click here to enter text.
15)	Any issues related to the receiver's ability to hook-up to or disconnect from drogue?	Click here to enter text.
16)	Were the refueling contact and disconnect control envelopes exceeded during the incident?	Click here to enter text.
17)	Were there any issues with flight control systems and/or stability augmentation? If Yes, provide details.	Click here to enter text.
18)	Was simultaneous refueling being performed at time of the incident?	Click here to enter text.
19)	Was there any abnormal hose response? If yes, provide details.	Click here to enter text.
20)	What was the fuel valve configuration at the time of the incident? Identify which fuel valves.	Click here to enter text.
21)	What was radio configuration at time of incident?	Click here to enter text.

11.1.3 Pre-Flight Related

1)	Pre-flight check, including built in test if applicable: date and time performed?	Click here to enter text.
2)	During pre-flight check and built in test, were there any fault codes or observations made? If yes, what actions were performed to overcome these?	Click here to enter text.
3)	Pre-flight system priming if applicable: date and time performed? For Boom-to-Drogue refueling, during pre-flight, was BDA kit hanging with a natural curve coming off the boom adapter valve?	Click here to enter text.

11.1.4 In-Flight Related

1)	Were any power up or built in test fault codes identified? If yes, what were fault codes?	Click here to enter text.
2)	What action was taken to clear fault codes?	Click here to enter text.
3)	If applicable, was fuel system primed before AR? Define "primed".	Click here to enter text.
4)	During this sortie, had successful refueling been conducted with this equipment and with other receiver A/C? If problems were	Click here to enter text.

	encountered, explain whether they were related in any way to the incident.	
5)	Were there any operating limitations/restrictions involving or relating to AR operations?	Click here to enter text.

11.2 Maintenance Questions

11.2.1 General Information

1)	Refueling equipment top level assembly part number?	Click here to enter text.
2)	Refueling equipment serial number and/or manufacturer part number?	Click here to enter text.
3)	Date of last scheduled maintenance (for applicable equipment)?	Click here to enter text.
4)	Were there any unexpected observations made when scheduled maintenance was performed? If yes, what observations were made?	Click here to enter text.
5)	What maintenance and/or repair actions were taken as a result of this?	Click here to enter text.
6)	Date of last unscheduled maintenance/repair?	Click here to enter text.
7)	What was the reason for the unscheduled maintenance?	Click here to enter text.
8)	Were any parts replaced as part of this unscheduled maintenance? If yes, what parts?	Click here to enter text.
9)	What repair actions/adjustments were made?	Click here to enter text.
10)	Check maintenance records (to include historical records) and list any other related occurrences.	Click here to enter text.
11)	Are there any mandatory Service Bulletin, Airworthiness Directive (AD) or other engineering instruction not implemented on the equipment that may have a potential impact on the incident?	Click here to enter text.
12)	Are there any deferred maintenance task not implemented on the equipment that may have a potential impact on the incident?	Click here to enter text.
13)	Validate serviceability and calibration of test equipment and GSE Were surge boots checked for proper pressure?	Click here to enter text.

11.2.2 Pre-Flight Related

1)	Pre-flight check, including built-in-test if applicable: date and time performed?	Click here to enter text.
2)	During pre-flight check and built-in-test, were there any fault codes or observations made?	Click here to enter text.

	If yes, what actions were performed to overcome these? Was the AR hose tight wrapped prior to this flight, if it had experienced earlier problems with other A/C.	
3)	Pre-flight system priming if applicable: date and time performed?	Click here to enter text.
4)	Pre-flight check: Pressure regulation system (Also MA type coupling regulator(s))	

11.2.3 Post-Flight Related

1)	During post-flight inspection, what was condition of refueling equipment?	Click here to enter text.
2)	Were there any damaged, missing or additional parts found?	Click here to enter text.
3)	Provide any data from A/C (flight data recording/voice/video recording etc.) considered appropriate (e.g. airspeed, altitude, heading, system status, gross/fuel weight).	Click here to enter text.
4)	If possible, conduct power up/built-in-test or download fault code data. Provide fault codes.	Click here to enter text.
5)	What repair action was taken and what parts were replaced to make equipment serviceable?	Click here to enter text.
6)	Was GSE used to validate system working/not working as related to the incident? Describe any malfunctions. Detail the GSE types used in testing.	Click here to enter text.
7)	Post-flight check: Pressure regulation system working	

12.0 Receiver's (Probe Equipped) Incident Data Collection Form

This section contains questions for the probe-equipped receiver aircrew/maintenance to answer with respect to information about the incident. The initiator may determine which questions, if not all, need to be answered.

12.1 Operator/Aircrew Questions

12.1.1 General Information

1)	Identify date (UTC/Zulu) of incident	Click here to enter text.
2)	Identify time (UTC/Zulu) of incident	Click here to enter text.
3)	A/C operator (e.g. USAF, RAF etc.)	Click here to enter text.
4)	A/C type	Click here to enter text.
5)	A/C tail number/serial number (Navy Bureau number, etc.)	Click here to enter text.
6)	Type of refueling equipment (i.e. probe) involved in incident	Click here to enter text.

12.1.2 Incident Related

1)	Describe the incident.	Click here to enter text.
2)	Provide a description of events when the incident occurred (Please document conditions to turbulence, weather, visibility, icing etc. to define all issues or conditions).	Click here to enter text.
3)	What steps of AR procedure were being performed at time of incident?	Click here to enter text.
4)	What was A/C altitude at time of incident?	Click here to enter text.
5)	What was A/C airspeed at time of incident?	Click here to enter text.
6)	Did incident occur in day/night? If at night, was NVIS used?	Click here to enter text.
7)	If refueling took place at night, was refueling equipment illumination functioning correctly?	Click here to enter text.
8)	Were all formation aids on the tanker working or available for the receiver pilot/crew? If not, list what was malfunctioning?	Click here to enter text.
9)	Provide data with regard to A/C fuel weight and distribution at time of incident.	Click here to enter text.
10)	Was there any unusual bow wave or down wash effect before or during the incident that had an aerodynamic effect on the refueling equipment?	Click here to enter text.
11)	Was hose/drogue stable before and during incident? If not, does it appear that instability may have been caused by damaged/missing parts?	Click here to enter text.

12)	What was your closure rate on the drogue?	Click here to enter text.
13)	If applicable, were there any issues readying the probe (i.e. extend/retract)?	Click here to enter text.
14)	What was external stores configuration?	Click here to enter text.
15)	Were there any issues with ability to contact with or disconnect from tanker? Note whether there was fuel spray on contact. Note whether the bow wave influenced the contact and/or fuel spray.	Click here to enter text.
16)	Were there any issues with flight control systems and/or stability augmentation? If Yes, provide details.	Click here to enter text.
17)	Were there any issues with canopy/windscreen visibility?	Click here to enter text.
18)	Define any and all abnormal hose/drogue response. Provide details.	Click here to enter text.
19)	Define the fuel valve configuration at the time of the incident. Provide details of fuel valve configuration.	Click here to enter text.
20)	What was radio configuration at time of incident?	Click here to enter text.

12.1.3 Pre-Flight Related

1)	Pre-flight check, including built-in-test if applicable: date and time performed?	Click here to enter text.
2)	During pre-flight check and built-in-test, were there any fault codes or observations made? If yes, what actions were performed to overcome these?	Click here to enter text.

12.1.4 In-Flight Related

1)	If known, had system or equipment exhibited any abnormal symptoms prior to incident?	Click here to enter text.
2)	During this sortie, had successful refueling been conducted with other aircraft? If yes, provide details of previous refueling (i.e. system recycle, number of contacts, same or different tanker, etc.) Were any other observations made?	Click here to enter text.
3)	Were there any operating limitations/restrictions involving or relating to AR operations?	Click here to enter text.
4)	During the fuel transfer, did the tanker operator/observer note any fuel spray at the probe/drogue fuel vents (especially continuous venting and spray)?	Click here to enter text.
5)	If refueling took place at night, was refueling equipment illumination functioning correctly?	Click here to enter text.

6)	Were all formation aids on the tanker working or available for the receiver pilot/crew? If not, list what was malfunctioning?	Click here to enter text.

12.2 Maintenance Questions

12.2.1 General Information

1)	Refueling equipment top level assembly part number?	Click here to enter text.
2)	Refueling equipment serial number and/or manufacturer part number?	Click here to enter text.
3)	Date of last scheduled maintenance (for applicable equipment)?	Click here to enter text.
4)	Were there any unexpected observations made when scheduled maintenance was performed? If yes, what observations were made?	Click here to enter text.
5)	What maintenance and/or repair actions were taken as a result of this?	Click here to enter text.
6)	Date of last unscheduled maintenance/repair?	Click here to enter text.
7)	What was the reason for the unscheduled maintenance?	Click here to enter text.
8)	Were any parts replaced as part of this unscheduled maintenance? If yes, what parts?	Click here to enter text.
9)	What repair actions/adjustments were made?	Click here to enter text.
10)	Was GSE used to verify whether the equipment was working properly or was malfunctioning as related to the incident? Detail what GSE was used.	Click here to enter text.
11)	Check Maintenance Records. (to include history for other occurrences)	Click here to enter text.
12)	Are there any mandatory Service Bulletin, Airworthiness Directive (AD) or other engineering instruction not implemented on the equipment that may have a potential impact on the incident?	Click here to enter text.
13)	Are there any deferred maintenance task not implemented on the equipment that may have a potential impact on the incident?	Click here to enter text.
14)	Validate serviceability and calibration of test equipment and GSE.	Click here to enter text.

12.2.2 Pre-Flight Related

1)	Pre-flight check, including built-in-test if applicable: date and time performed?	Click here to enter text.
2)	During pre-flight check and built-in-test, were there any fault codes or observations made? If yes, what actions were performed to overcome these?	Click here to enter text.

12.2.3 Post-Flight Related

1)	During post-flight inspection, what was condition of refueling equipment?	Click here to enter text.
2)	Were there any damaged, missing or additional parts found?	Click here to enter text.
3)	Provide any data from A/C (flight data recording/voice/video recording etc.) considered appropriate (e.g. airspeed, altitude, heading, system status, gross/fuel weight).	Click here to enter text.
4)	If possible, conduct any applicable tests of the refueling equipment. Provide faults found.	Click here to enter text.
5)	What repair action was taken and what parts were replaced to make equipment serviceable?	Click here to enter text.

13.0 Agreements

This section provides guidance on types of agreements required post event to secure successful data retrieval and analysis from both tanker and receiver program offices. Due to the international nature of ARSAG, this document could be used among several program offices and/or organizations as a guide document to assist in capturing the important aspects of all refueling incidents. Below is an example of one program office's Agreement instructions. ARSAG suggests that using organizations share their agreements to be incorporated in the document.

13.1 Tanker Program Office Agreements

The KC-135 PO agrees to establish the following procedures with the receiver community's Point of Contact (POC), as defined in the national SRDs, whenever an AR incident has occurred:

1)	Use of KC-135 Life Cycle Management Program (LCMP) website to share data relevant to the AR incident.	Click on: AFLCMC.WKDM.Workflow@us.af.mil
2)	Establish communication with KC-135 POC to determine agreements for data collection from tanker and/or receiver A/C personnel.	Request access to the KC-135 ARSAG Community of Practice (CoP) page within the above link.
3)	Verification of proper authorizations to share data.	Note: the workflow addresses provided by the USAF Tanker fleet represent the engineering organizations within the USAF and are committed to sharing data to the maximum extent possible for mishap prevention purposes.
4)	Coordination and concurrence on types of data to be shared (i.e. GO81, FDR, etc.).	Click here to enter text.
5)	Effective safeguards to secure data shared, received, and stored.	Click here to enter text.
6)	Follow up actions (i.e. lessons learned, remedy procedures, etc.) to ensure success of future AR operations.	Click here to enter text.

The A/C Designation PO agrees to establish the following procedures with the receiver community's POC, as defined in the national SRDs, when an AR incident has occurred:

1)	Use of website to share data relevant to the AR incident	Click here to enter text.
2)	Establish communication with Aircraft incident POC to determine agreements for data collection from tanker and/or receiver A/C personnel.	Click here to enter text.
3)	Verification of proper authorizations to share data	Click here to enter text.
4)	Coordination and concurrence on types of data to be shared (i.e. GO81, FDR, etc.)	Click here to enter text.
5)	Effective safeguards to secure data shared, received, and stored	Click here to enter text.
6)	Follow up actions (i.e. lessons learned, remedy procedures, etc.) to ensure success of future AR operations	Click here to enter text.

13.2 Receiver Program Office Agreements

The A/C Designation PO agrees to establish the following procedures with the tanker community's POC, as defined in the national SRDs, when an AR incident has occurred:

1)	Use of website to share data relevant to the AR incident	Click here to enter text.
2)	Establish communication with Aircraft incident POC to determine agreements for data collection from tanker and/or receiver A/C personnel.	Click here to enter text.
3)	Verification of proper authorizations to share data	Click here to enter text.
4)	Coordination and concurrence on types of data to be shared (i.e. GO81, FDR, etc.)	Click here to enter text.
5)	Effective safeguards to secure data shared, received, and stored	Click here to enter text.
6)	Follow up actions (i.e. lessons learned, remedy procedures, etc.) to ensure success of future AR operations	Click here to enter text.

The A/C Designation PO agrees to establish the following procedures with the tanker community's POC, as defined in the national SRDs, when an AR incident has occurred:

1)	Use of website to share data relevant to the AR incident	Click here to enter text.
2)	Establish communication with Aircraft incident POC to determine agreements for data collection from tanker and/or receiver A/C personnel.	Click here to enter text.
3)	Verification of proper authorizations to share data	Click here to enter text.
4)	Coordination and concurrence on types of data to be shared (i.e. GO81, FDR, etc.)	Click here to enter text.
5)	Effective safeguards to secure data shared, received, and stored	Click here to enter text.
6)	Follow up actions (i.e. lessons learned, remedy procedures, etc.) to ensure success of future AR operations	Click here to enter text.

14.0 Repositories

This section provides guidance on repository proposals to access past event data for future designs.

14.1 Repository Instructions

DTIC has a password protected website repository available only to US military and DOD civilians. The completed survey could be posted in that repository at no cost. The survey data thus would be protected – provided only to those having a need to know.

When completed, this questionnaire may require special access control and/or military classification. The company/organization and/or country filling in the data should identify that control information to the recipients of the completed document.

It is recommended that the applicable PO act as the recipient of the completed document and provide instructions or list desirable outcomes for a repository system to access past incident event data as needed for future designs or considerations.