



AIR TO AIR REFUELING OVER CANARY ISLANDS

Are you going to miss it?

28NOV2020



INTRODUCTION

This is a Air-to-Air Refueling event in GCD-20B restricted area.

The event's day is November 28th, 2020. Between 1500z and 1900z

It's recommended read the document ATP56.

Maximum 10 slot for each tanker, for each slot maximum 2 receivers.

Briefing previous to mission 1505z

COMPLAN

All aircraft have to contact with GCCC_MIL_CTR (Callsign Papayo) after take off, the aircraft will notify their intentions. Near of work area, Papayo clear to entry in the GCD, maintain 1000ft or 5nm of separation with the tanker. Papayo guide to receiver to the tail of tanker. When receiver have the tanker in sight, always minus 1000ft that tanker, Papayo clear to switch to AAR frequency. When AAR is done, the receivers climb plus 1000ft and contact with Papayo.

There should be as many AAR channels as there should be tankers.

Tankers will notify to Papayo, weather condition in the area, hoses o boom operative and play time.

All participants must check that they have access to the HQ-SO Discord server in advance of the event to be able to solve problems.

Communications will be used simultaneously on the Discord Server and on the TS2

See Annex D.

PILOT INFORMATION

Two roles, Tanker or Receiver. Maximum fuel offload for each aircraft is 6000Lb or 2700kg. Read & understand ANNEX A, ANNEX B, ANNEX C and ANNEX D, & I recommended read ATP56.

The tanker make holdings, inside GCD20B. The Papayo guide the receivers to tail of tanker.

Recommended holding pattern

Reference point for the holding.

N27 14 19 W015 51 55 - N27 14.31 W015 51.92

Heading 010° / Turn Left / leg 30nm

Maximum speed in the holding 300KIAS.

Rendezvous procedure.

See annex B.

The receivers will set in stand by the squawk before climb to same altitude with the tanker.

El altimeter setting inside work area is 29.92inHg or 1013.2Hpa.



In GCLP (Gando Air Force Base)

Preferential runway is 03R in VMC. This runway don't have ILS. Circuit pattern at east of runway. IMC preferential rwy 03L

In GCRR (Arrecife)

Preferential runway is 03. Circuit pattern at east of runway.

Tankers

Home bases

- Gando AFB (GCLP) for Prop tankers (KC130, C160, A400M etc)

- Lanzarote (GCRR) for jet tankers (KC46, KC135, KC10 etc)

Air-to-Air Refueling area designated is GCD20-B between FL100 and FL280

Minimum time on station, establish FL assignee, with hoses operative, and inside AAR area, will be two hours for win the points. In the case, the receivers is less than 10 for each tanker, the AOC clear to RTB (Return to base) before of two hours on station.

The flight level designated for each type tanker are the next:

Flight Level	Type
FL260	Jet
FL220	Jet
FL180	Jet/Prop
FL140	Prop

Each tanker take off and entry in the work area, climb or descent to the flight level designated. Check the weather in the area, hoses/boom operative and transmit the information to GCCC_MIL_CTR. The tankers will can change the Flight Level designated in coordination with ATC.

The departure and arrival base is the same, Gando AFB for prop and Lanzarote for Jets.

Receivers

All receiver home base is Gando AFB (GCLP).

The minimum time in flight for assign points will be 60 minutes. The slots is the hour what the receivers and tanker will be rendezvous and transfer fuel. No is the Take off slots.

The receivers request entry AAR area to GCCC_MIL_CTR. The ATC guide the aircraft 1000ft below tankers FL and with vectors guide behind the tanker approximate 5nm. In visual with the tanker GCCC_MIL_CTR clear to switch with boom frequency assignee. Always, the aircraft in the event will be monitor GCCC_MIL_CTR frequency.

After refueling, the receivers leave the area with GCCC_MIL_CTR.

The staff recommendation is use the 60 minutes of flight for make a visual flight for the Canary Islands, under Military control. Remember the rules contained in the divisional SO Order.

Violation of these rules may result in not getting SO Points.



The departure and arrival base is Gando AFB.

SCENERY

No specific scenery is necessary for this event.

ATC INFORMATION

GCCC_MIL_CTR calling for this events is "Papayo"

Papayo will check and verify that there isn't interference in the GCD, coordinate with the civil ATC if there is one or directly with the aircraft.

The positions of GCLP_TWR, GCRR_TWR. GCCC_NW_CTR are welcome in addition to the approximations, no special knowledge is required, they may be in coordination with GCCC_MIL_CTR in the division's Discord.

The events aircraft maintain Papayo frequency all time, except in Land and Take off or for traffic sequences

ATC positions

GCCC_MIL_CTR	--> APC + CAO	Mandatory Position
GCCC_NW_CTR	--> ADC	
GCLP_APP	--> ADC	
GCAE_APP	--> ADC	
GCLP_TWR	--> AS3	
GCLP_GND	--> AS3	
GCRR_TWR	--> AS1	
GCRR_GND	--> AS1	

We recommend having CAO knowledge in all positions. For users from another division they must have the GCA.

AIRCRAFT TYPES

All tankers inside ATP-56 are welcome.

The receivers will depend on the capacity of the tankers registered in the event. Probe and Drogue or boom system.



AIRSPACE

The Air to Air will be inside GCD-20B

Area Coordinates

Coordinates in DD mm SS	-	Coordinates in DD mm.mm
N27 20 00 W015 50 07	-	N27 00.00 W015 15.12
N26 49 23 W016 09 17	-	N26 49.38 W016 09.28
N26 43 09 W016 07 40	-	N26 43.15 W016 07.67
N26 35 01 W015 42 01	-	N26 35.02 W015 42.02
N27 19 55 W015 36 45	-	N27 19.92 W015 36.75
N27 20 00 W015 50 07	-	N27 00.00 W015 15.12

Vertical Limits: FL100 - FL280

The tankers are free to move inside the area GCD-20B, but recommended make the holding published. In any case, the turn always left in AAR.

Reference point for the holding.

N27 14 19 W015 51 55 - N27 14.31 W015 51.92

Heading 010° / Turn Left / leg 30nm

Maximum speed in the holding 300KIAS.

DOCUMENTS

ATP56: http://www.japcc.org/wp-content/uploads/ATP-3.3.4.2_Ed_C_Ver_1_Air-to-Air_Refuelling.pdf

SDR Spain: <https://www.japcc.org/?file=980>

NOTAMs

PERMAMENT RESTRICTED AREA GCD-20B ACTIVATED

LOWER LIMIT: FL100

UPPER LIMIT: FL280

ACTIVATION: 28NOV2020 1500z - 2000z

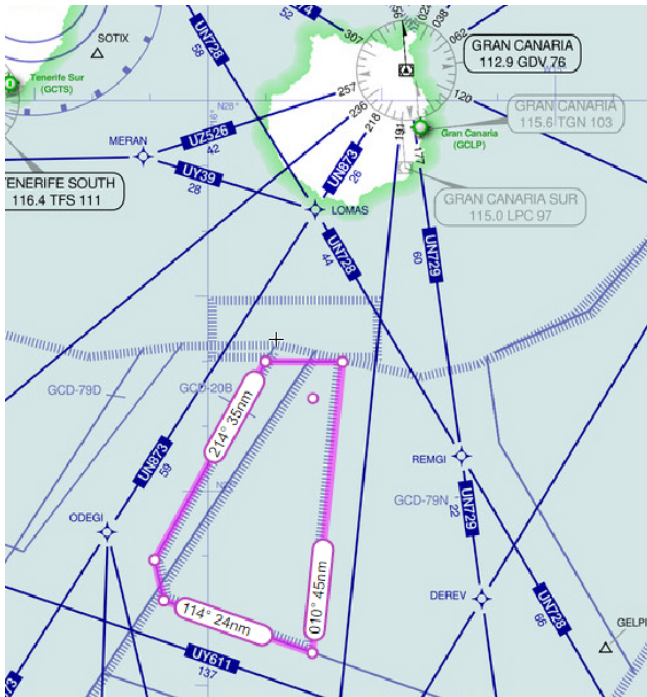
CONDITIONS OF USE: RESERVED AND DESIGNATED FOR EXCLUSIVE USE BY SPECIAL OPEATIONS

FLIGHTS ONLY INSIDE AAR EVENT, NO OTHER AIR TRAFFIC SHALL ENTER RESTRICTED AREA.



MAPS

GCD-20B (AAR Area) and reference point for AAR Holding Pattern recommended.



GCLP Parking Zone





ANNEX A - FIXED WIND RENDEZVOUS PROCEDURES

2.1. INTRODUCTION

The purpose of a RV procedure is to achieve close visual contact between the tanker and a receiver section or element. For the purpose of this Chapter, each RV procedure is written for one tanker. However, all procedures can be adapted when tankers are flying in any formation. The RV is usually at the ARCP and at the ARCT. This Section outlines 7 standard types of RV. The type of RV utilised will be dictated by the mission requirements, available equipment, weather conditions and the EMCON option in force.

2.2. GENERAL PROCEDURES

a. **Altimeter Settings.** Unless otherwise directed, an altimeter setting of 1013.2 mb (29.92 inches) is to be used for AAR operations at or above transition altitude, or when over water and operating in accordance with ICAO procedures. When not operating on standard pressure settings, tanker crews are to include the altimeter setting in the RV Initial Call. To minimise the chance of dissimilar pressure settings between receivers and tankers, the following terminology is to be used:

(1) **Flight Level.** When the tanker and receiver altimeters are set to the international pressure setting of 1013.2 mb (29.92 inches), vertical reference will be made using the term 'flight level'.

(2) **Altitude.** When the tanker and receiver altimeters are set to QNH or a regional pressure setting, vertical reference will be made using the term 'altitude'.

b. **Vertical Separation.** Receivers are normally to join from below and are to maintain a minimum of 1000 ft vertical separation, unless otherwise stated at the planning or briefing stage, until visual contact and positive identification have been made. If the planned flight levels/altitudes/heights are found to be unsuitable, the tanker commander may select other flight levels/altitudes/heights that will give the best possible chance of a successful RV. A change of flight levels/altitudes/heights is to be made only when all aircraft and radar units taking part in the procedure are aware of the proposed change and ATC has approved the use of the airspace.

c. Speeds.

(1) **Tanker.** The tanker speed during a RV procedure is prescribed in the tanker's flight manual and repeated in the applicable National SRD; this speed is normally optimised for best tanker performance. This is the speed that the tanker will fly if communication is not established with the receiver. If the tanker's speed differs from that listed, the tanker should advise the receiver in the RV Initial Call.

(2) **Receiver.** The receiver should normally fly the speed prescribed in its flight manual and listed in appropriate tanker National SRD. For Option 1 of the RV Delta (Chapter 2, Annex 2D) where the tanker's speed is known to the receiver, the receiver flies the tanker speed plus 20 kts.

d. **Visibility.** Receivers will maintain altitude separation of at least 1000 ft until 1 nm from the tanker.

(1) **Visual With Tanker.** Once the receiver(s) is visual with the tanker, receivers are clear to join and should initiate a progressive climb towards the tanker.

(2) **Not Visual With Tanker.** If receivers are not visual with the tanker, the subsequent actions will be in accordance with the capability of the receiver.



(a) **Receivers Without Radar or with Weather Radar.**

Aircraft without radar or with only Weather Radar shall not proceed inside 1 nm unless the tanker is in sight.

(b) **Basic Airborne Intercept Radar.** Where receiver national limitations permit, aircraft with a basic airborne intercept radar (i.e., target search available but lock capability not available) may climb to 500 ft below base AAR altitude, maintain this level and close to ½ nm.

(i) **Loss of Radar Contact.** If radar contact is lost inside of 1 nm without visual contact with the tanker, the receiver is to descend to 1000 ft below tanker altitude.

(c) **Airborne Intercept (AI) Radar.** Where receiver national limitations permit, as long as radar lock is maintained, aircraft equipped with an AI radar may continue closure at

no more than 10 kts of overtake inside of ½ nm maintaining 500ft vertical separation to a minimum range of 1500 ft.

(i) **Visual Contact Established.** When visual contact is established with the tanker, a progressive climb may be initiated in order to join the tanker.

(ii) **No Visual Contact by 1500 ft Range.** If visual contact is not established by a range of 1500 ft, closure is to cease.

(iii) **Loss of Radar Lock Inside ½ nm Range.** If radar lock is subsequently lost, the receiver shall reestablish at least ½ nm range and maintain a minimum of 500 ft vertical separation.

(3) **Visual Contact Not Established.** If visual contact is not achieved at the appropriate minimum closure range, the receiver(s) may:

(a) Stabilise at the appropriate minimum range and maintain it until the tanker manoeuvres into an area of improved visibility. or

(b) Descend to 1000 ft below the tanker, drop back to 1 nm and either maintain this position until the tanker manoeuvres into an area of improved visibility or terminate the RV.

e. **Termination of AAR Due to Visibility.** AAR is to be discontinued when in-flight visibility is deemed insufficient for safe AAR operations.

f. **Turning Angles of Bank (AOB) and Range.** A planning assumption of 25° AOB is used by tankers for most RV procedural turns mentioned in this Chapter and its Annexes. This AOB should be flown whenever possible; most of the tanker Turn Ranges in RV procedures are based on this planning assumption. Additional sets of Turn Range tables are provided for some RV procedures; these tables are based on the planning assumption of the tanker using the AOB specified in the table.

Racetracks and Orbits. Whenever possible, the tanker should set up a racetrack in a suitable position ahead of the RV. The main purpose of this is to allow the tanker timing to be adjusted to meet the needs of the receiver. In the Annexes to this Section, racetracks are described in positions ahead of the RV, which are considered to be ideal; however, these are not inflexible and they may be planned elsewhere if necessary. An orbit by the tanker may be used as a tactical holding device during the course of a RV to allow a receiver to catch up, or to hold if visual contact is not made when expected. Unless otherwise briefed, or for ATC reasons, all racetracks and orbits are to be to the left to give the tanker pilot the best lookout.

h. **Heading Reference.** All headings are magnetic unless otherwise stated.



a. **Join – Echelon Left Position.** Receivers arrive from tanker's left side and form up in the Echelon Left position as described in para. 2.5. See Figures 2-3A, 2-3B and Figure 2-2 as appropriate to the tanker.

b. **Receiver Sequence.** To ensure safe operations, the tanker will direct receivers to the formation position that they are to adopt. Furthermore, the tanker will direct when receiver aircraft are to reposition. Receiver aircraft are to move sequentially from Echelon Left position to the astern position on command from the tanker; this command may be given by radio or by using the standard procedural signals in EMCON conditions. See Figure 2-3 for illustrations of controlled receiver flow around the tanker.

c. **Simultaneous Movement of Receivers- Repositioning Receivers.** Up to two receivers may be directed to move simultaneously from the Echelon Left position to behind the hoses. Similarly, both aircraft behind the hoses may be directed to move simultaneously from this position to the Echelon Right position. See Figure 2-3 for illustrations of controlled receiver flow around the tanker. Until directed by the tanker, all other aircraft should remain steady in their allocated formation position.

d. **Collision Avoidance.** Receivers are responsible for ensuring that the airspace they are moving into is clear of other aircraft. In addition, moving receivers are mutually responsible for ensuring that they do not collide with the other repositioning aircraft.

e. **Receiver(s) on Tanker with 2 Wing Refuelling Stations**

(1) **One Receiver on Tanker with 2 Wing Refuelling Stations.**

When the tanker has 2 wing refuelling stations and both are available, the receiver moves to the right hand refuelling position.

(2) **Two Receivers on Tanker with 2 Wing Refuelling Stations.** If there is more than one receiver and both refuelling stations are vacant, the first receiver moves behind the right hand hose into the astern position, and the second receiver moves in turn behind

the left hand hose into the astern position. See Figures 2-3C and 2-3D.

Receivers Waiting on the Tanker Wing. Until directed by the tanker, all other aircraft should remain steady in their allocated formation position.

f. **Receiver(s) on Tanker with One Wing Refuelling Station or Centreline Station**

(1) **Movement of Receivers.** When the tanker has one wing refuelling station or a single centreline hose, only one receiver will be directed to move in turn to cycle from the Echelon Left position to behind the available hose.

(2) **Receivers Waiting on the Tanker Wing.** Until directed by the tanker, all other aircraft should remain steady in their allocated formation position.

g. **Clear for Contact and Remaining in Contact**

(1) **Individual Clearance to Contact.** Normally, the tanker is only able to safely monitor one receiver at a time. Consequently, receivers will be cleared (verbally and/or by light signals) to make contact one at a time. Where the tanker is able to monitor both receivers, simultaneous contacts may be approved.

(2) **Remaining in Contact.** Because of the potential to cause the tanker to yaw slightly if one receiver disconnects from a wing hose, receivers should remain in contact until cleared to disconnect by the tanker. See Figure 2-3E.

h. **Disconnect.** Normally, when both wing hoses are occupied, the tanker will instruct receivers to disconnect simultaneously. However, the tanker may order individual disconnects either to maximize hose efficiency or because of disparate receiver fuel states.

(1) **Other Considerations for Disconnecting.** Refer to Chapter 2 Section IV para. 2.28.e. for other safety considerations associated with receiver disconnects.



i. **Change Hose Procedure.** It is important to move only one receiver at a time when cycling/changing the receivers behind hoses. To cycle 2 receivers between wing hoses, the tanker is to:

- (1) Order one receiver to the Echelon Left or Right position.
- (2) With this achieved, the second receiver may be cleared to the astern position behind the vacant hose.
- (3) On completion of this manoeuvre, the first receiver may be cleared to the astern position behind its new hose.

j. **Reforming.** Once cleared from behind the hose, receivers will reform in Echelon Right Position. See Figure 2-3F.

k. **Refuelling Subsequent Receiver(s).** The next receiver waiting in Echelon Left Position will remain in that position until cleared by the tanker to move behind the hose. Before moving, the receiver(s) must also visually confirm that the previous receiver(s) have moved towards the Echelon Right Position.



- (2) **Tankers With Refuelling Observers.** Where the tanker has rearward facing observers or boom operators, the Echelon Left position is behind the wingline of the tanker. See Figure 2-2.

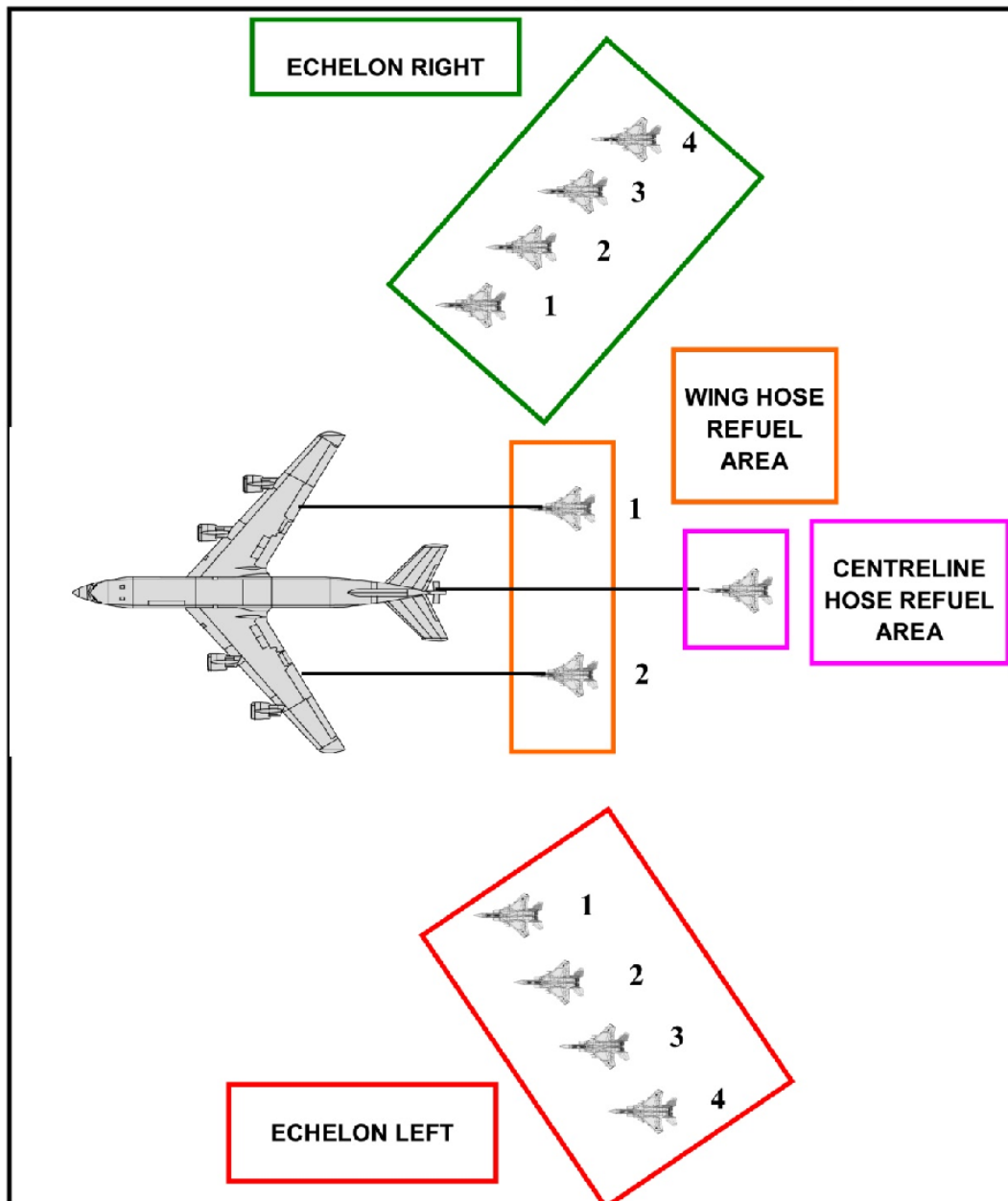


Figure 2-2. Diagram of Key Areas Around Tankers - Boom and Probe and Drogue with an Aft Observer



- (2) **Tankers With Refuelling Observers.** Where the tanker has rearward facing observers or boom operators, the Echelon Left position is behind the wingline of the tanker. See Figure 2-2.

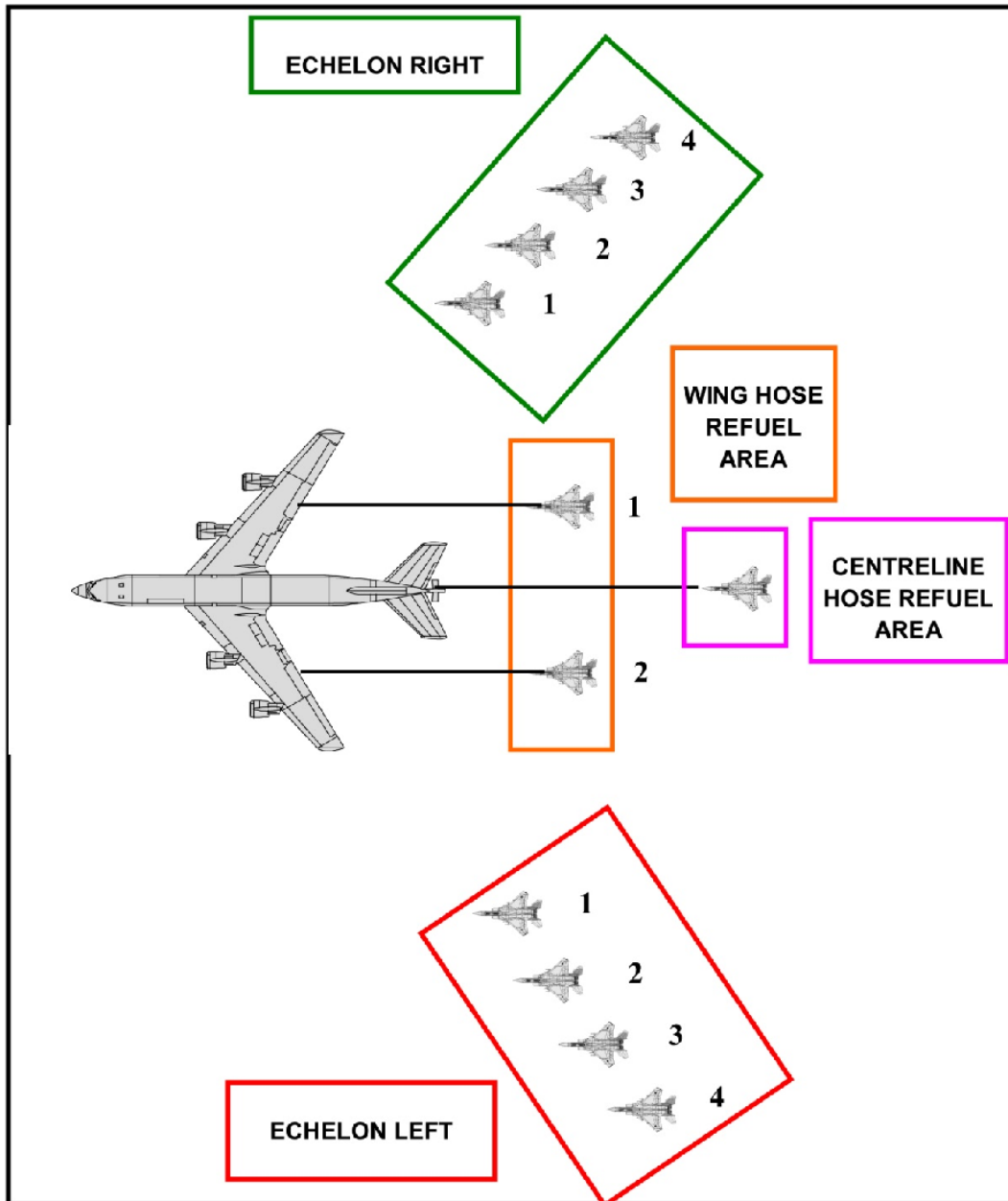


Figure 2-2. Diagram of Key Areas Around Tankers - Boom and Probe and Drogue with an Aft Observer



ANNEX B - RV ALPHA

2.A.1. INTRODUCTION

The RV Alpha (Anchor) procedure is a RV carried out under the control of a radar station on the ground, in the air or on-board ship. The RV Alpha is normally used to vector receivers to tankers operating on an AARA/anchor area but may be used as required in any situation. However, with the agreement of the tanker, the controller may give the tanker alterations of heading to effect a quicker join-up.

2.A.2. PROCEDURE

The essential requirement for a RV Alpha is positive control by the radar controller to bring the receiver to an ideal position of 1 nm behind and 1000 ft below the tanker.

a. **Track Requirements.** The radar controller will either anchor the tanker or provide headings for it to fly.

b. **Tanker Responsibilities.** The tanker(s) is(are) to:

- (1) Fly an anchor orbit unless directed otherwise by the radar controller.
- (2) Be at the base AAR altitude.
- (3) Normally, fly the turns at either 15 or 25 AOB.

c. **Receiver Responsibilities.** Receiver(s) are to:

- (1) **FL/Altitude/Height.** When directed by the controlling agency, be established at 1,000 ft below the assigned base air refuelling altitude.
- (2) **Heading.** Fly headings as directed by the controlling agency.
- (3) **Receiver Takes Control of RV.** Complete the RV using organic AI radar once radar contact with the tanker is established and call: “(Callsign) Judy”
- (4) **Receiver Visual with Tanker.** When visual with the tanker and EMCON procedures permit the use of radios, the receiver calls: “(Callsign) VISUAL”
- (5) and is then cleared by the tanker to join (on the left unless directed otherwise by the tanker).

c. **Communication Procedures.** Whilst on station, the tanker will monitor the published AAR frequency. When the controlling agency initiates the receiver RV, it will ensure that the receiver(s) confirm their FL/altitude/height, A/A TACAN (channel), Mode 3 and armament state to the tanker.

- (1) In EMCON 1, the receiver(s) should not close inside 1 nm until radio contact is established with the tanker.
- (2) If either the tanker or receiver(s) is not at its briefed FL/altitude/height an additional radio call is to be made when established at its nominated FL/altitude/height.
- (3) During EMCON 2, radio calls will not be made unless they are necessary to ensure safe vertical separation.

e. **Vertical Separation.** The RV vertical separation is to be maintained until 1nm from the tanker(s) and visual contact is established. The receiver(s) will then commence a gradual climb to the astern (boom) or Echelon Left position (drogue). If the tanker(s) is not acquired visually by 1 nm, use the procedures described in Chapter 2, Section I, para. 2.2.d.

f. **Navigation Responsibilities During AAR.** Unless the controlling agency is vectoring the tanker, navigation is the tanker’s responsibility from the astern position (boom) or Echelon Left position (drogue) until the receiver(s) depart the tanker. Nevertheless, receivers should monitor their navigation systems to ensure situational awareness.



2.A.3. CONTROL

Where a radar station provides advisory information, as distinct from control, one of the other types of RV should be planned. In this case, the information passed by the radar station may be used to supplement the use of airborne aids.

2.A.4. ANCHOR PATTERN

a. The refuelling anchor pattern is a left-hand racetrack with legs separated by as little as 7 nm for smaller, slower tankers such as the KC-130 and as much as 20 nm for larger, faster tankers. The standard leg length for this pattern is 50 nm, as shown in Figure 2A-1.

b. The location of the pattern is determined by the anchor point and the orientation of the inbound course.

c. Single tankers or tanker formations may be used in the anchor. Routinely, single tankers will be separated by 4000 ft; tanker formations will be separated by 4000 ft between the highest aircraft in the lower formation and the lead aircraft of the next higher formation. (The actual vertical separation between tanker formations will be briefed in the SPINS or pre-flight formation brief. Normally, 3000 ft should be considered the minimum for safe vertical separation between multiple tanker formations).

d. Anchor AAR tracks requiring frequent turns should be flown in trail or offset trail (approximately 20° echelon, as described in Chapter 2 Annex 2H).

ANNEX C - SAFETY PROCEDURES

2.25. INTRODUCTION

The foundation for the safe conduct of AAR by national or multi-national forces is standard, simple and unambiguous procedures. With these criteria established, multinational AAR is practicable by day and night, and during periods of EMCON constraint.

2.26. RENDEZVOUS

a. **Vertical Separation.** Regardless of the method used to achieve a RV, it is vital to minimize collision risks by establishing a vertical separation between tanker and receiver; this vertical separation should be maintained until the receiver commences a visual join with the tanker.

b. **Receiver Joining Tanker from Below.** In some scenarios, prior to the start of the RV procedure, the receiver may be cruising above the level of the tanker. Nevertheless, unless otherwise directed, and to achieve a commonality of practice, the receiver should descend and establish itself at least 1000 ft below the tanker before commencing the RV procedure. The cockpit view for receivers is usually better looking forward and upwards; moreover, a join from below allows the receiver greater freedom for manoeuvre with less risk of losing visual contact with the tanker.

2.27. JOINING - SAFETY CONSIDERATIONS

a. Probe and Drogue Refuelling

(1) To complete a safe join, the receiver should achieve a stable formation position (i.e. zero rate of closure) on the tanker before manoeuvring to the astern position. Stable formation must be achieved in a position where an error of judgement in the join does not lead to a collision risk with the tanker.

(2) Longitudinal distance from the tanker and rate of closure from behind are the most difficult features to assess, particularly at night; therefore, a direct join to a position behind the tanker should not be attempted.

(3) Accordingly, all joins should be made to a loose echelon position in the Echelon Left position; thus errors in line and overtake speed can be corrected clear of the tanker.



b. **Boom.** Although receiver may join directly behind the boom, the considerations described in para. 2.27.a.(1) applies equally to receivers joining a boom equipped tanker.

Probe and Drogue Contacts and Disconnects. The rear viewing system of most multi-point tankers can only monitor the approach path to one wing hose at a time. Therefore, unless the tanker approves simultaneous receiver contact, the following guidelines should be adopted:

(1) **Simultaneous AAR.** For simultaneous AAR, one receiver is to be in contact (with fuel flowing if wet) before the second receiver is cleared for contact.

(2) **Simultaneous Disconnect.** Normally, receivers will be cleared to disconnect simultaneously.

(3) **Individual Receiver Disconnect.** Receivers may be cleared to disconnect individually if disparate fuel transfers exist. An individual disconnect may disturb the hose for the receiver remaining in contact; therefore, during receiver CONVEX, tankers may only order individual disconnects with the approval of the receiver leader or in the event of a spokes contact.

(4) **Contacts/Disconnects – Straight and Level.** There is considerable potential for receiver pilot disorientation during AAR, particularly at night or when horizons are ill defined; this can be exacerbated by the wing anhedral/dihedral of some tankers giving false horizontal cues. Ideally, all contacts and disconnects should occur in straight and level flight, although by day experienced pilots may make contacts/disconnects in steady turns, climbs and descents providing the formation is clear of cloud and the drogues are stable.

(5) **Prohibited Contacts/Disconnects.** Contacts/disconnects are not to be permitted during tanker attitude changes.

(6) **Contacts/Disconnects – CONVEX.** Some nations require that, during receiver CONVEX, tankers will order all contacts/disconnects in straight and level flight unless the receiver supervisory pilot requests otherwise for training purposes.

(7) **Contacts/Disconnects – Night.** By night, extra caution is needed to guard against disorientation. Therefore, with due regard to prevailing visual conditions, the tanker may permit contacts and disconnects at night whilst in a steady turn/climb/descent. Where a receiver pilot subsequently elects to make contact or disconnect only in straight and level flight, they should, if possible, inform the tanker. Some nations will not permit night contacts or disconnects in a steady turn/climb/descent unless operationally necessary.

2.39. RADAR AND WEAPONS

It is the responsibility of the receiver aircraft commander to ensure that the aircraft radar is not radiating. Normally, the radar should be set to standby once the receiver is visual with the Tanker. Similarly, the receiver aircraft commander is to ensure that weapons are safe prior to commencing an RV with a tanker. During conditions of EMCON constraint (EMCONs 3 and 4), radio calls between tanker and receiver to check on radar and/or armament states are both inappropriate and impractical.



ANNEX D - COMMUNICATIONS

2.45. AAR RADIO PROCEDURES

- a. **General.** Control of receivers during routine AAR is achieved by radio commands given by the tanker. To assist interoperability, these commands are standardized, although mission/operation-specific requirements may be detailed in the tasking order. Importantly, to avoid uncertainty, normally, all RT calls will be prefaced with the speaking unit's individual callsigns. Outside of the training arena, normal operations are conducted using EMCON 2 procedures. Therefore, radio communications should be kept to a minimum consistent with safety and the published EMCON option; excessive radio traffic is distracting to the receiver pilot and is a potential source of confusion. Regardless of the type of AAR equipment in use, only a basic set of commands is required to accomplish refuelling. These basic commands are listed at Chapter 2 Annex 2P.
- b. **Probe and Drogue.** In general terms, the probe and drogue system places the responsibility of positioning for refuelling on the receiver, after the tanker has cleared the receiver astern the refuelling equipment.
- c. **Boom.** The boom system places more reliance on the tanker giving positioning commands to the receiver and the boom interphone should be used rather than RT whenever possible.



Serial (a)	Situation (b)	Tanker RT (c)	Receiver RT (d)
1	15 min prior to RV	a. Set Radar/Rendezvous Beacon (where fitted) b. Set Air to Air TACAN to appropriate channel (ensure Y- or X- channel set appropriate to receiver capability)	a. Set Radar/Rendezvous Beacon (where fitted) b. Set Air to Air TACAN to appropriate channel (unless required for navigation) c. Transmit receiver IFF
2	RV Initial Call – made following ATC clearance to call (may be as much as 15 min prior to ARCT)	"(Receiver Callsign), (tanker callsign) for RV (type). My FL/altitude/height, when cleared, your FL/altitude/height, set A/A TACAN (channel), Mode 3, (timing if required), (and altimeter setting if not 1013.2mb (29.92 inches Hg))" (1)	"(Tanker Callsign), (receiver callsign), when cleared, my FL/altitude/height, TACAN (channel), Mode 3, (timing, if required), (and altimeter setting if not 1013.2mb (29.92 inches Hg)), (if appropriate, nose cold, switches safe)" (1)
3	Receiver has radar contact and takes responsibility for closing to visual range	-	"(Callsign) Judy"
4	Receiver has visual contact approaching tanker	-	"(Callsign) Visual"
5	Receiver cleared to join tanker	"(Callsign) Clear join"	Acknowledge (2) (3)
6	Receiver in the Echelon Left Position	-	"(Callsign) Echelon Left" (4)
7	Tanker AAR equipment deployed (hose trailed, boom lowered)	"(Callsign) Clear astern left/centre/right" (4)	Acknowledge (4) (5) (6)
8	Receiver astern left/centre/right	-	"(Callsign) Astern left/centre/right (4) (6)
9	Tanker AAR equipment ready to pass fuel	"(Callsign) Clear contact (specify left/ right if a multi-point tanker)" (4) (7)	Acknowledge (8)
10	Closing to boom contact	"Stabilize, Forward, Back, Up, Down, Right, Left, Return to astern" (4)	Acknowledge (4)
11	Receiver to disconnect	"(Callsign) Disconnect" (4)	Acknowledge (4) (9)
12	Receiver astern left/centre/right	-	"(Callsign) Astern left/centre/right"



Serial (a)	Situation (b)	Tanker RT (c)	Receiver RT (d)
13	Receiver to effect Emergency Separation	"(Callsign), Breakaway, Breakaway, Breakaway" (10)	Disconnect (11)
14	Practice Emergency Separation (12)	"(Callsign), Breakaway, Breakaway, Breakaway" (10)	Disconnect (11)
15	Terminate Emergency Separation	"(Callsign) Terminate Emergency Separation"	Acknowledge (4)
16	Receiver strikes drogue and suspects damage to ribs or canopy of drogue	-	"(Callsign) Spokes" (13)
17	Receiver to move from astern to Echelon Right Position	"(Callsign) Go Echelon Right" (14)	Acknowledge (4)
18	Receiver Echelon Left/Right	-	"(Callsign) Echelon Left/Right (14)
19	Receiver cleared to leave the tanker	"(Callsign) Clear to leave"	Acknowledge