EXERCISE SCOTTISH DEFENDER

1   GENERAL

1.1   OVERVIEW

1.1.1   Quick Reaction Alert (QRA), A state of readiness that many air forces around the world maintain, allowing them to respond to any possible air threat within their area of responsibility. But with current safety levels of modern aviation, means that QRA pilots are commonly scrambling to unresponsive aircraft or aircraft in distress. The UK currently operates 2 QRA bases, RAF Coningsby to the south and RAF Lossiemouth to the north.

The United Kingdom and Ireland, Special operations department, would like to invite you to Exercise Scottish Defender. The operation will allow you to utilise and develop the essential skills of QRA, which include interception, identification and air to air refuelling with an added twist, a real opposing force to defend against.

1.2   OBJECTIVES

1.2.1   To run a logistically smooth exercise.

1.2.2   To provide a challenge to pilots by simulating QRA.

1.2.3   To conduct air to air refuelling, safely

1.2.4   To conduct safe bombing operations

1.2.5   To effectively and efficiently utilise non standard assets such as Airborne Early Warning Aircraft

1.3　DATE AND TIME

1.3.1　**Date:** 29th October 2023

1.3.2　**Time:** 1300z-1700z

1.4　VERBAL BRIEFING

1.4.1　Attendance for the briefing **IS MANDATORY**.

1.4.2　A verbal Briefing will take place at:

Time - 1230z

Server - IVAO Special Exercises Department Discord

Room- #event-voice-1

1.5　DEFINITIONS

1.5.1　The following are definitions of some acronyms used throughout this document:

TERM	EXPLANATION
GAT	General Air Traffic (e.g. Filed IFR or VFR under S, N or G)
OAT	Operational Air Traffic (e.g. Filed IFR or VFR under M)
TACAN	Tactical Air Navigation System
RAF	Royal Air Force
XU	IVAO United Kingdom and Ireland Division
AARA	Air to Air Refuelling Area

2   PILOTS

2.1   GUIDELINES

2.1.1   Aircraft must be suitable for their task they are planning on completing.

2.1.2   General aviation will not be allowed to operate at RAF Lossiemouth for the duration of the event.

2.1.3   Pilots **MUST** register before the event if they wish to take part in the exercise.

2.1.4   Formations/Groups will be permitted to participate in the exercise.

2.1.5   It is recommended that aircraft arriving from another country **should** operate as GAT until reaching UK airspace.

2.2   ARRIVAL

2.2.1   Pilots wanting to fly in for the event **MUST** arrive within 20 minutes before the beginning of the event, if wishing to fly in at their designated airfields.

2.2.2   Pilots are reminded that all airspace above FL195 in the United Kingdom is Class C airspace and must obtain clearance before entering this airspace.

2.3   RULES

2.3.1   Defending Pilots must be parked on the ramp with engine off for the beginning of the main event (1400z-1700z).

2.3.2   Pilots are **NOT PERMITTED** to exceed Mach 0.95 at any time during the event unless ATC permission is granted.

2.3.3   Pilots are asked not to use Webeye during the event.

2.4   AIRFRAMES

2.4.1   Multiple types of aircraft will be usable for the Exercise:

1. Multi Role Fighter Jets capable of fulfilling the role of either interceptor or strike aircraft such as the F-16, Eurofighter, F-35, SU-27, MiG29, Rafale and others

2. Tanker Aircraft such as the A330 MRTT, A310 MRTT, KC-135R, KC46, IL-76 and others (Limited Slots)

3. AWACS Aircraft such as the E3 Sentry, E7 Wedgetail, IL-76 and others (Limited to 1)

4. Strategic Bombers such as the B-1B, B2, B-52, Avro Vulcan, TU-95, TU-160 and others.

3 CONTROLLERS

3.1 GUIDELINES

3.1.1 Controllers must have an in-depth understanding of the exercises and phraseology of Special Exercises in the United Kingdom and Ireland Division.

3.1.2 Controllers should be understanding and accommodating of pilots who are unfamiliar with Special Exercises phraseology and procedures and should assist where possible.

3.1.3 Controllers must use clear English when there is an apparent misunderstanding in instructions.

3.1 POSITIONS

3.1.1 The following positions will be available during the event:

POSITION	CALLSIGN	FREQUENCY
EGQQ_CTR	Swanwick Military	134.300
EGVV_CTR	Swanwick Military	127.450
EGQS_APP	Lossiemouth Approach	123.300
EGQS_TWR	Lossiemouth Tower	118.900
EGQQ_CRC_CTR	Blackdog	135.075
EGQQ_M1_CTR	Magic	136.375

4 Assistance

4.1 Division Wiki

IVAO United Kingdom and Ireland offer a Wikipedia style information site which can be used for nearly all the information required to fly and control for the event. The following areas are available:

Air Traffic Controller (Generic) - https://wiki.ivao.aero/en/home/divisions/xu/atc

Pilot (Generic) - https://wiki.ivao.aero/en/home/training/main/pilot_documentation

Special Operations Phraseology - https://xu.ivao.aero/soPhraseology

Special Operations (Division) - https://wiki.ivao.aero/en/home/divisions/xu/soc

4.2 Email/Forum/Discord

Leading up to this event, you can contact the Special Exercises Department of IVAO United Kingdom and Ireland using the following means:

Purpose	Means	Notes
Email	xu-soc@ivao.aero	
Forum	http://xu.forum.ivao.aero	
Discord	http://xu.ivao.aero/discord	IVAO XU Members only.
	https://sod.ivao.aero/discord	IVAO HQ-SOD Discord, Look for 'XU-SOC'

4.3 PROCEDURES

    4.3.1 Before and during the event XU staff (And experienced XU members) will be available to assist with understanding and completing the necessary procedures for this mission.

    4.3.2 This is a training exercise; therefore, it is not expected that pilots know procedures fully.

5 EXERCISE PLAN

5.1 SITUATION

5.1.1 All aircraft are at their designated bases ready for the training exercise.

5.1.2 Hostile elements shall be present at this exercise.

5.1.3 Weather will be briefed in the verbal brief on the day.

5.1.4 Please note that there are 2 on stand times depending on what you are flying. Fighter aircraft are to be at their bases at 1400z while all other types are to be at their bases at 1300z due to the increased flight times.

5.2 MISSION

5.2.1 Fighters - Defending: To maintain a heightened readiness QRA (Pilot in cockpit engine off) throughout the mission and are to keeping this readiness at all times. Your role is to defend RAF Lossiemouth from attacking forces.

5.2.2 Fighters – Attacking: To support the Bomber force to reach their target as well as providing additional strike support where appropriate.

5.2.3 Tanker('s): To provide tanker support to QRA fighters to allow safe completion of their mission.

5.2.4 AWACS: To provide airborne command and control to defending aircraft as well as providing assistance to Tankers/Returns to base.

5.2.5 Bombers: To successfully release your bombs on RAF Lossiemouth

5.3 Execution - Defending

5.3.1 All defending fighter pilots will operate from RAF Lossiemouth (EGQS) and report to "Blackdog" once ready to join the exercise at 1400z.

5.3.2 Once ready "Blackdog" will contact the callings with their mission, pilots shall then contact the local controllers to depart the airfield and move to the area of the exercise.

5.3.3 "Blackdog" will guide pilots on to their target and pilots shall Identify the target, and note such things as Aircraft type, colour/markings, lights and configuration. It is highly likely that the aircraft may either turn away from Lossiemouth or may attack and try to press home their attack. In the event of the later, "Blackdog" should be informed immediately, however they may have already taken action launching additional aircraft at their digression. Note, the aircraft will not all be flying the same attitudes so listen carefully to any instructions. See Section 7.

5.3.4   Once "Blackdog" has released the pilot from the mission, they can either return to RAF Lossiemouth or head to tankers for simulated air to air refuelling. Once refuelled and ready, the pilots will contact Blackdog and inform them that they are prepared for the next assignment. If a mission is available, the pilot will be assigned a new target.

5.4 Execution – Offensive/Attacking

5.4.1   All attacking/offensive fighter and bomber pilots will operate from either RAF Leeming (Fighter) and RAF Fairford (AWACS/Bomber) and report ready to "Magic" once either airborne (Leeming) at 1400z or once handed over from Swanwick South (Fairford). It is hoped the AWACS will be on station at or before 1300z overhead the former RAF Leuchars as such the AWACS pilot will need to plan for this accordingly. Depending on aircraft type/tanker availability, air to air refuelling may or may not be available for this aircraft.

5.4.2   Once ready, "Magic" will contact pilots with their mission and direction to approach Lossiemouth from along with any other pilots you may be flying with. Formation flying is encouraged but loose formation is considered more than acceptable. You will be at this time told if you are to turn away or continue onto Lossiemouth effectively becoming Hostile.

5.4.3   If you are to turn away, once the defending fighters arrive and identify you, you are to turn 180 degrees and return in the direction you have just flown in. Once you are 80 miles from the Lossiemouth TACAN by DME, you will recall "Magic" for your next tasking. Do not panic, everyone will get their chance to be a attacking aircraft in turn as well as a passive one.

5.4.4   If you are to continue onto the target, based on what you are flying with will decide what actions you take here including when to engage any fighters or if a drop to low level is suitable. Work together to get to RAF Lossiemouth to attack the target. Report any successful attacks to "Magic" and any important information as you never know, additional help may not be far away. Once the attack is either complete or all aircraft have been shot down, return the way you came and report back to "Magic" you are ready for your next mission. Refuelling and Rearming is to be carried out at the Tanker locations.

5.5 Execution – Air to Air Refuelling

5.5.1 All Tanker aircraft will operate from RAF Brize Norton and report ready to Swanwick Military North once on station or approaching station with your expected on station time (you can update this to the controller as your fuel state dictates). You will be informed by E-Mail before the event by XU-SOC which AARA you will be operating in and where within it you will be operating.

5.5.2 The role of the air to air refuelling tankers is to support the exercise by keeping aircraft in the air with refuelling and other services for attacking aircraft (this is done virtually for ease of operation and simulates Red Flag aggressor operations). Although each side has their designated refuelling areas,

5.6 LOGISTICS

5.6.1 Air to air refuelling areas 1 and 4 will be available for tankers to use for defending aircraft.

5.6.2 Air to air refuelling areas 4 and 14 will be available for tankers to use for offensive aircraft.

5.6.3 Please note any aircraft in urgent need of fuel (defined as below bingo fuel) will be sent to either the nearest tanker (regardless of AARA) or the nearest suitable airfield (RAF Kinloss, RAF Lossiemouth or RAF Leuchars) as a matter of urgency. This will be both checked with the tanker pilot and confirmed by the relevant controller.

5.7 SIGNAL (COMMUNICATION)

5.7.1 A briefing will be held in the SO-HQ discord in #event-voice-1 at 1505z

5.7.2 The event will be running via controller channels, with "Blackdog" being the primary event coordinator for defending aircraft and "Magic" being the primary event coordinator for attacking aircraft with XU-SOC in overall control.

6 AIRFIELD AND CHARTS

6.1 CHARTS

6.1.1 The following resources are available:

Resource	Link
Military AIP (United Kingdom)	https://www.aidu.mod.uk/aip/aipVolumes.html
Civil AIP (United Kingdom)	https://nats-uk.ead-it.com/cms-nats/opencms/en/Publications/AIP/
Charts for EGQS	https://www.aidu.mod.uk/aip/pdf/ad/EGQS-Lossiemouth-Combined.pdf
Charts for EGVN	https://www.aidu.mod.uk/aip/pdf/ad/EGVN-Brize-Norton-Combined.pdf
Charts for EGXE	https://www.aidu.mod.uk/aip/pdf/ad/EGXE-Leeming-Combined.pdf
Charts for EGVA	https://www.airfieldresearchgroup.org.uk/community/116562=10778-20030612%20Fairford.pdf
SO Order (IVAO XU)	https://sod.ivao.aero/up/order/b1e0633bc4145febc89844619e9d15b8.PDF

6.1.2 **RAF Lossiemouth Ground Chart.** The following resource is a map of the taxiways for RAF Lossiemouth:
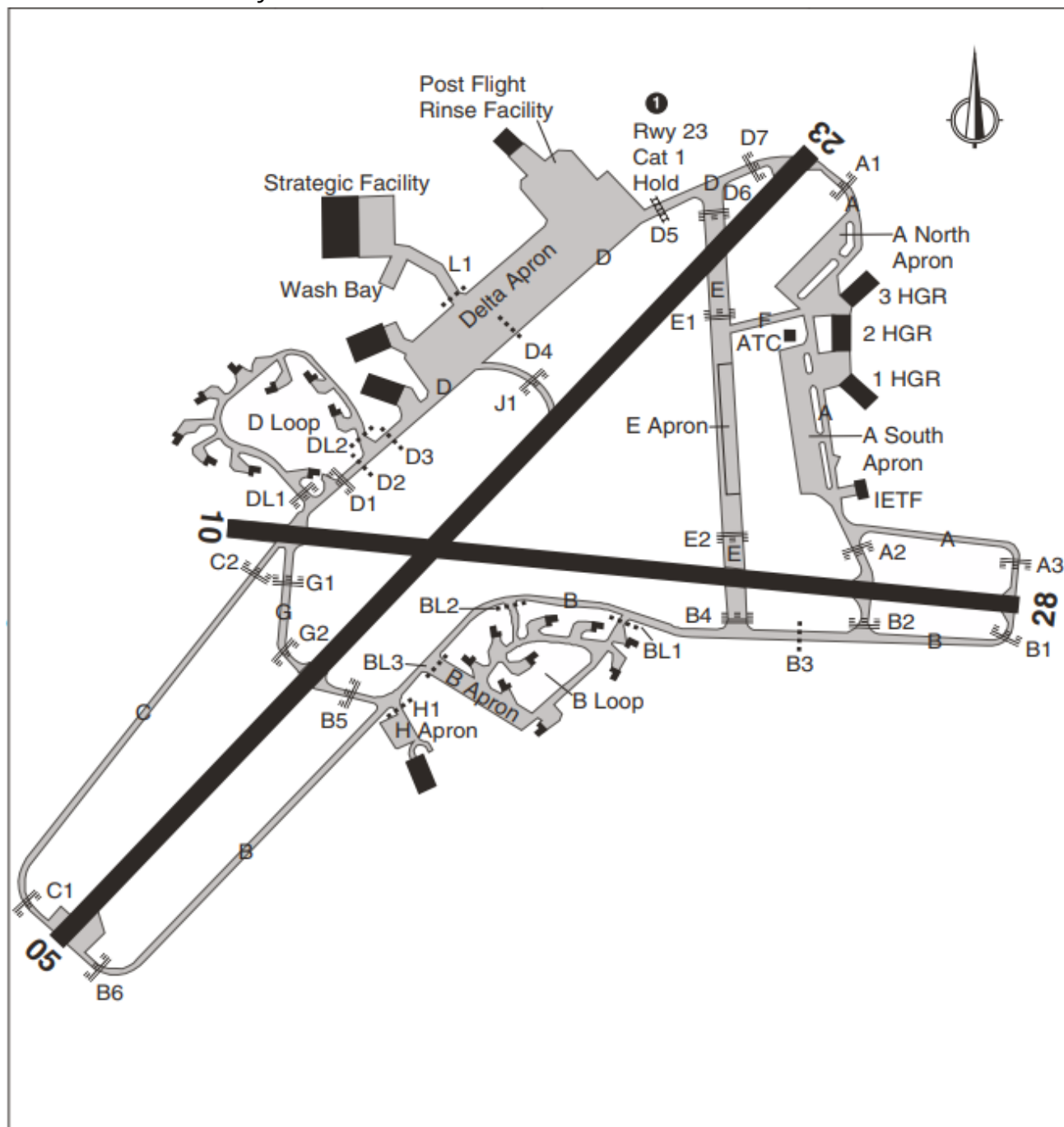
6.1.3 **RAF Leeming Ground Chart.** The following resource is a map of the taxiways for RAF Leeming:

1. **CAUTION**. Only the northern section of Twy A is used as twy, with a width of *15m;* the southern section is used for aircraft parking.
2. **CAUTION**. No twy signs.
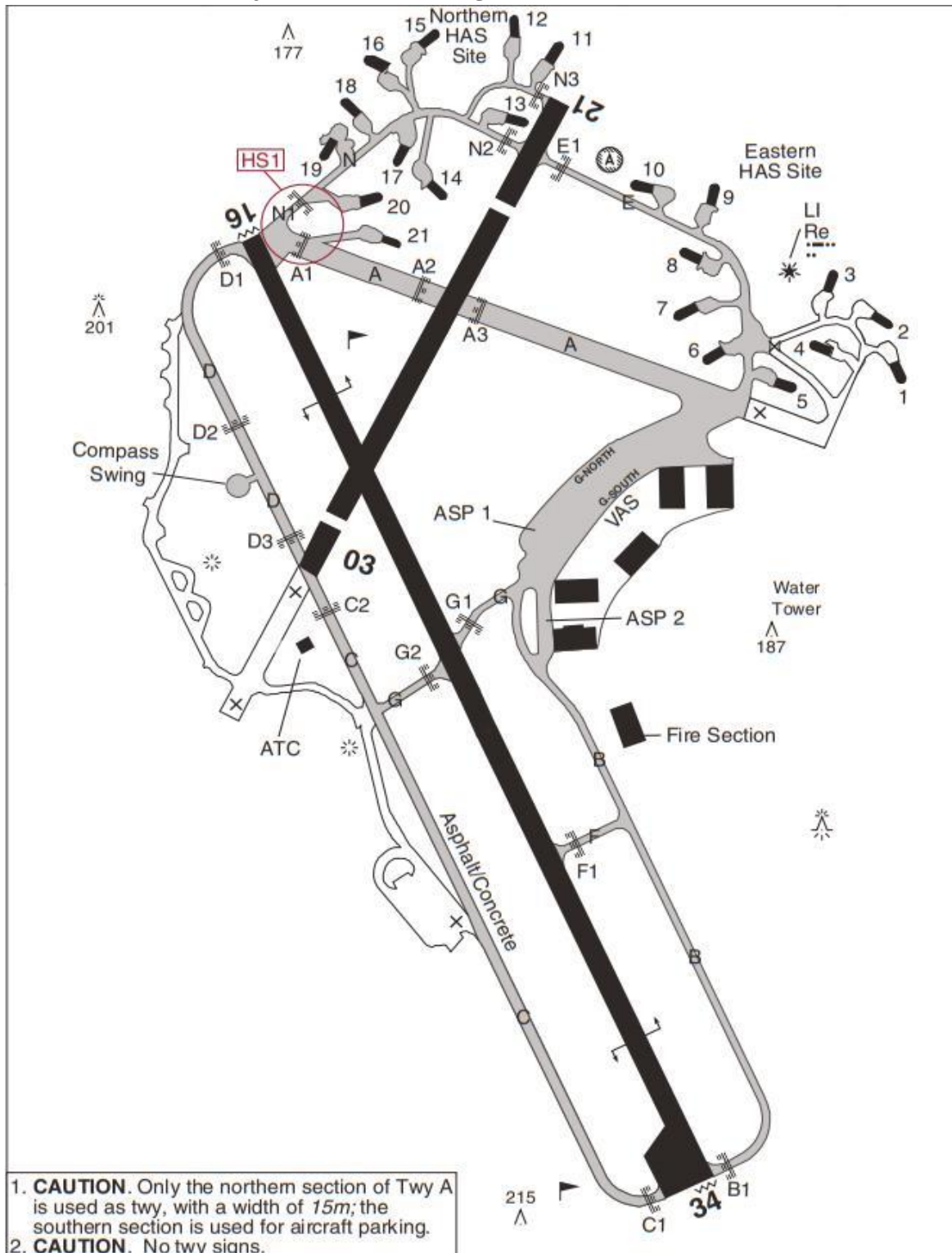
6.1.4 **RAF Brize Norton Ground Chart.** The following resource is a map of the taxiways for RAF Brize Norton:

Twy	Rwy 25 (m/ft)	Rwy 07 (m/ft)
THR	3050/10007	-
E	2700/8858	-
G	2703/8868	-
C	1619/5312	1485/4872
D	1716/5630	1415/4642
B	-	2853/9360
THR	-	3050/10007

Intersection Departures TORA
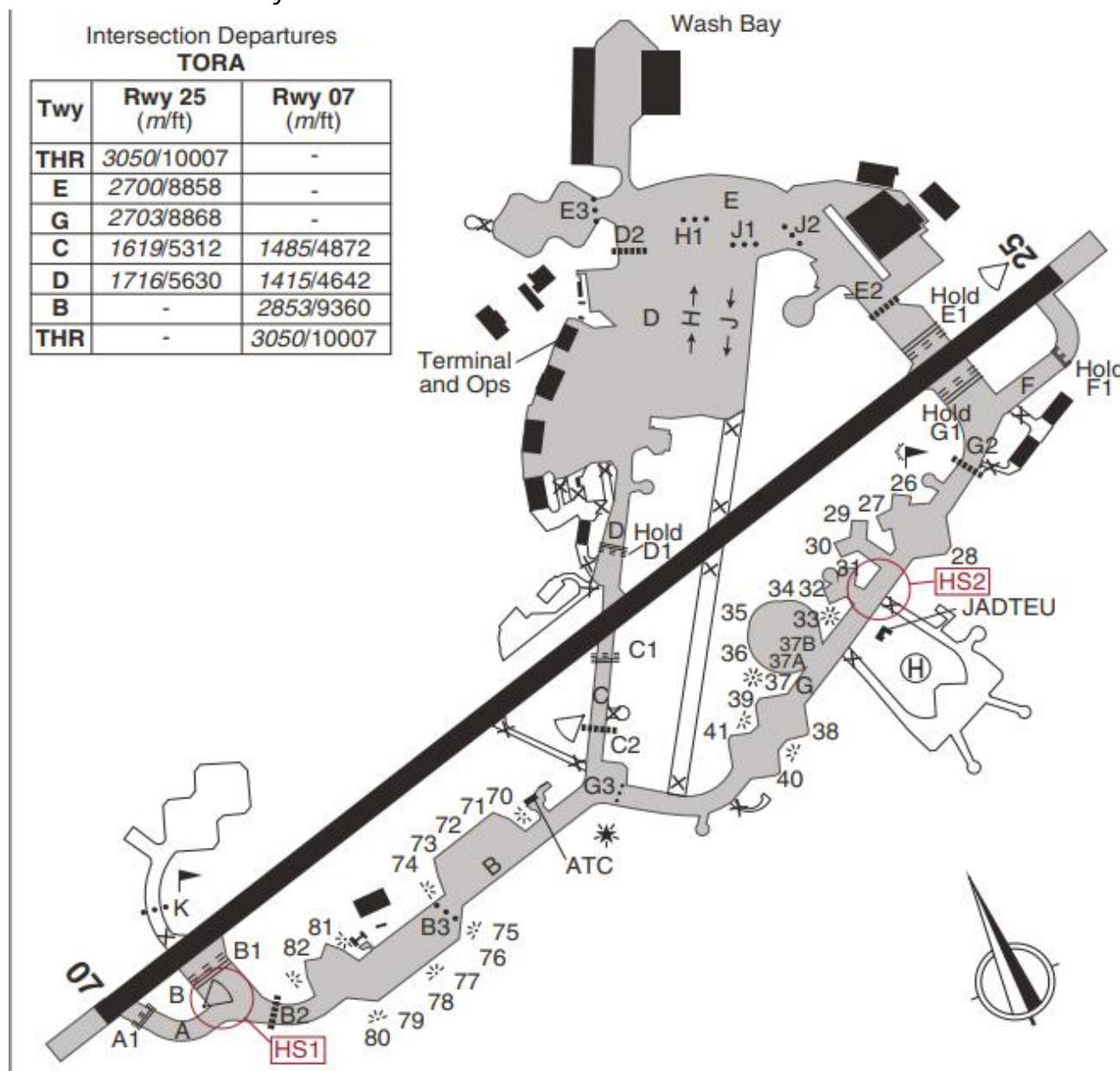
6.1.5 RAF Fairford Ground Chart. The following resource is a map of RAF Fairford.
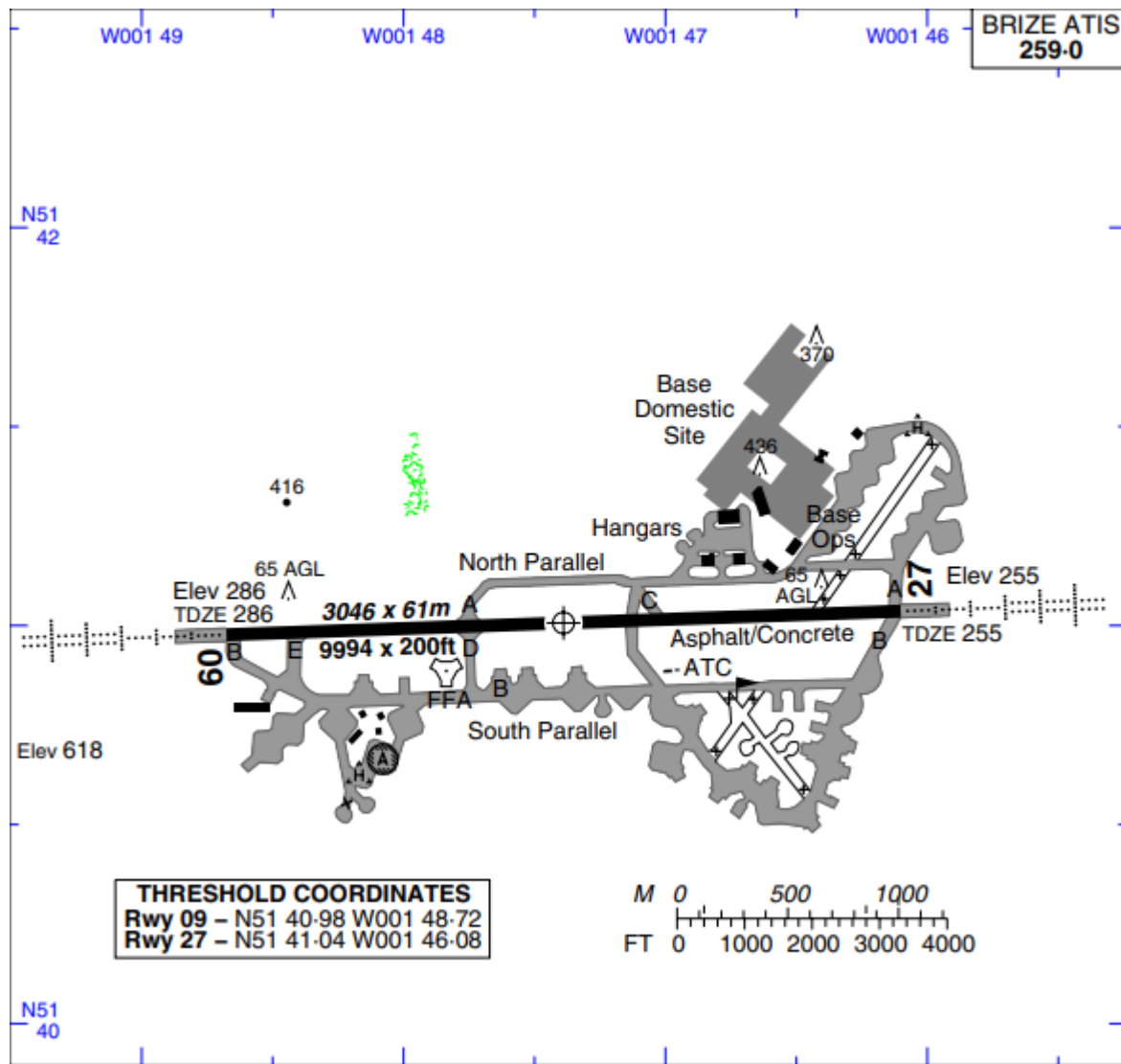
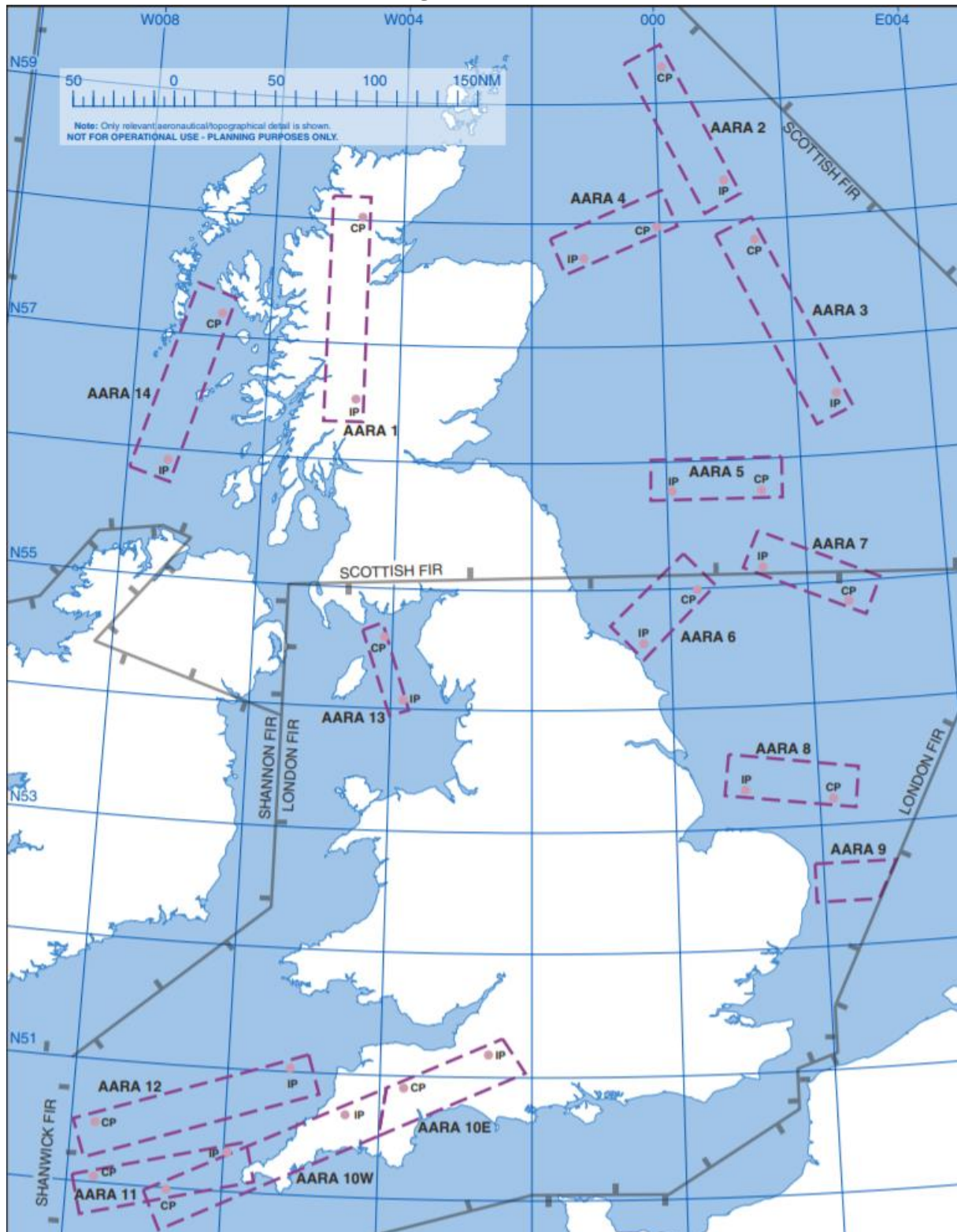6.1.6 **TACAN Routing.** The following chart shows the routing available from the edge of airspace in the United Kingdom.

6.1.6.1 *TACAN Documentation* - https://www.aidu.mod.uk/aip/pdf/enr/ENR-4-1.pdf

6.1.7 **AARA Areas**. The following chart shows the Air to Air Refuelling Areas (AARA) in the United Kingdom.

6.1.7.1 *Air to Air Refuelling areas* - *https://www.aidu.mod.uk/aip/pdf/enr/ENR-6-14.pdf*

6.1.8 **Controlled Airspace**. While the airspace will be NOTAMed and on a temporary restricted area from SFC to FL660, there may be civilian traffic in the below airspace which all pilots need to be mindful of. This airspace can be viewed in detail on Aurora.
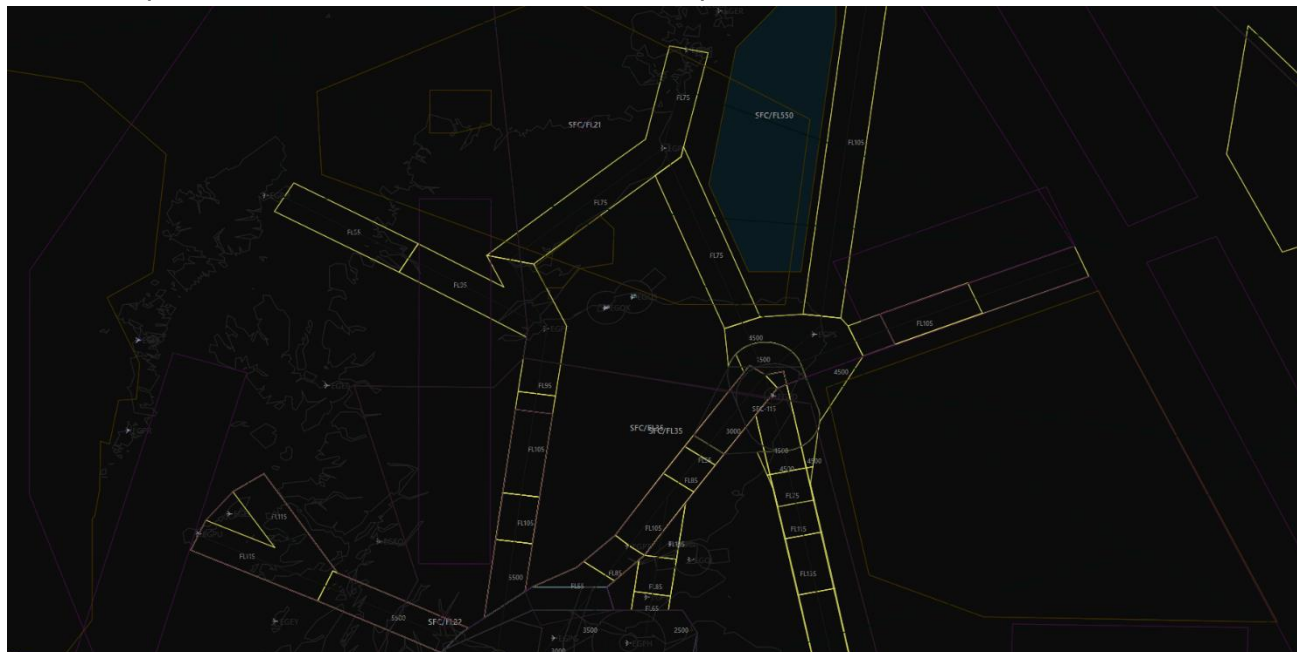
6.1.9 **Exercise Area.** The main exercise area is over 25000 square miles across the north of Scotland in for the form of 80nm in East/West and 50nm North/South from EGQS. Shown below. Note this will be operated under a Temporary Segregated Area NOTAMed by XU Air Operations. There will be a additional 30nm area to the west and east of the main area for formation assembly.

6.1.10 **Navigational Aids.** The following local navigational aids are available:

NAME	ID	TYPE	FREQ	DISTANCE	BEARING (From EGQS)
Lossiemouth	LSM	TACAN	111.300	N/A	N/A
Inverness	INS	VOR/DME	109.200	25NM	249˚
Aberdeen	AND	VOR/DME	114.300	42NM	127˚
Wick	WIK	VOR/DME	113.600	46NM	011˚

6.2 FLIGHT PLANNING

6.2.1 For the event an operational flight plan may be used below:

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Route://

FL: FL300

Speed: N400

Remarks: RMK/EXERCISE SCOTTISH DEFENDER
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6.3 AIRFIELD INFO

6.3.1 The following runways will be in use at RAF Lossiemouth:

RUNWAY	LENGTH	ILS	CIRCUIT	HEIGHT
05	2756m	N/A	Left Hand	**1000ft QFE** Run-in and Break 1000ft QFE
23	2756m	111.55	Left Hand	
10	1339m	N/A	Right Hand	
28	1339m	N/A	Left Hand	

6.3.2 The following runways will be in use at RAF Leeming:

RUNWAY	LENGTH	ILS	CIRCUIT	HEIGHT
16	2291m	110.30	Left Hand	**1000ft QFE** Run-in and Break 1000ft QFE
34	2291m	N/A	Right Hand	

6.3.3   The following runways will be in use at RAF Brize Norton:

RUNWAY	LENGTH	ILS	CIRCUIT	HEIGHT
07	3050m	108.55	Left Hand	**1000ft QFE**
25	3050m	108.55	Right Hand	Run-in and Break 1000ft QFE

6.3.4   The following runways will be in use at RAF Fairford:

RUNWAY	LENGTH	ILS	CIRCUIT	HEIGHT
09	3046m	113.40	Left Hand	**1000ft QFE**
27	3046m	111.10	Right Hand	Run-in and Break 1000ft QFE

6.4 FREQUENCY'S

6.4.1   The following frequencies will be in use:

POSITION	CALLSIGN	FREQUENCY
EGQQ_CTR	Swanwick Military	134.300
EGVV_CTR	Swanwick Military	127.450
EGQS_APP	Lossiemouth Approach	123.300
EGQS_TWR	Lossiemouth Tower	118.900
EGQQ_CRC_CTR	Blackdog	135.075
EGQQ_M1_CTR	Magic	136.375

6.5 SCENERY

6.5.1 While scenery will not be enforced for this event, it is strongly advised you use the following scenery to enhance your experience. RAF Lossiemouth:

PLATFORM	LINK
FS9	https://library.avsim.net/search.php?SearchTerm=RAF+Lossiemouth&CatID=root&Go=Search
FSX, FSX:SE, P3Dv1-4	https://flyawaysimulation.com/downloads/files/9224/fsx-raf-lossiemouth-scenery/
X Plane 11	https://forums.x-plane.org/index.php?/files/file/11549-egqs-raf-lossiemouth-2010/ (Default is excellent quality)
MSFS2020	https://flightsim.to/file/27378/raf-lossiemouth-egqs

6.5.2 RAF Leeming

PLATFORM	LINK
FS9	https://www.flightsim.com/vbfs/fslib.php?searchid=84463492
FSX, FSX:SE, P3Dv1-4	https://flyawaysimulation.com/downloads/files/9226/fsx-raf-leeming-scenery/
X Plane 11	https://forums.x-plane.org/index.php?/files/file/47250-egxe-raf-leeming/ (Default is excellent quality)
MSFS2020	https://flightsim.to/file/9917/raf-leeming-egxe

6.5.3   RAF Brize Norton

PLATFORM	LINK
FS9	https://www.flightsim.com/vbfs/fslib.php?searchid=84463492
FSX, FSX:SE, P3Dv1-3	https://library.avsim.net/esearch.php?CatID=fsxafcad&Sort=Name&ScanMode=0&Name=&FileName=&Author=&DLID=&Page=171
P3Dv4	https://militaryaiworks.com/download-hangar/file-library/download/10-scenery/2073-raf-brize-norton-for-p3dv4
X Plane 11	https://forums.x-plane.org/index.php?/files/file/42211-egvn-raf-brize-norton/ (Default is excellent quality)
MSFS2020	https://flightsim.to/file/33957/raf-brize-norton-egvn-uk

6.5.4   RAF Fairford

PLATFORM	LINK
FS9	https://simviation.com/fs2004scenery108.htm
FSX, FSX:SE, P3Dv1-4	https://flyawaysimulation.com/downloads/files/7800/fsx-raf-fairford-2009-scenery/
X Plane 11	https://forums.x-plane.org/index.php?/files/file/17049-raf-fairford-dkm/ (Default is excellent quality)
MSFS2020	https://flightsim.to/file/706/egva-raf-fairford-uk

7 BREVITY WORDS

7.1.1 Below is a list of brevity word that may be used during the event.

PRO WORD	MEANING
ANGELS	Height of friendly aircraft in thousands of ft from mean sea level (MSL).
BANDIT	An aircraft identified as enemy, in accordance with theatre identification (ID) criteria. The term does not necessarily imply direction or authority to engage.
BINGO	Fuel state needed for recovery.
BLIND	Aircraft has lost visual contact with another friendly aircraft or ground position (opposite of VISUAL).
BOGEY	Unidentified aircraft.
BRAA	Following formation is in tactical control format providing target bearing, range altitude and aspect relative to the specified friendly aircraft.
BREAK AWAY	Tanker or receiver call indicating that an immediate disconnect and vertical and nose or tail separation between tanker and receiver is required.
BUSTER	Fly at maximum continuous speed (mil power)
CHICKS	Friendly aircraft OR Friendly interceptor aircraft
CLOSING	Decreasing in range or azimuth
COMMIT(TED)	The intention to conduct an intercept against BOGEY(S)/ BANDIT(S).
CRUISE	Return to cruise speed (after buster or gate)
DISCONNECT	Command by tanker or receiver that boom/drogue will be disconnected.
EYEBALL	Fighter with primary visual identification responsibility.
GATE	Fly at maximum speed (afterburner).
HIGH	Target altitude is above 40.000' MSL.
HOLDING HANDS	Aircraft are joined or in close formation.

ID	Intercept and identify the target or ID accomplished, followed by type of aircraft.
JOINING	Aircraft joining or re-joining the formation.
JUDY	AD fighter has radar/ visual contact and is taking control of the intercept within a close control mission.
KNOCK IT OFF	Safety directive to cease air combat exercise manoeuvres/attacks/activities
LEVEL	Contact designated is at your ANGELS.
LIGHTBULB	Turn all position lights to bright.
LIGHTS ON/OFF	Turn on/off exterior lights.
LINER	Fly at speed giving maximum cruising range.
LOST CONTACT	Previous contact is lost, provide target information. OR Sensor information on a friendly aircraft is lost
MACK NO	I have reached maximum speed and am not closing my target.
MACK YES	I have reached maximum speed and am closing my target.
MARKING	Friendly aircraft is leaving contrails.
MEDIUM	Target altitude between 1000 ft. MSD and 40.000 ft. MSL
NO FACTOR	Not a threat.
NORMAL	Target ground speed is between 200 and 600 kts.
PADLOCKED	Aircrew cannot take his eyes off another aircraft without losing tally or visual.
PLAYTIME	Amount of time aircraft can remain on station, given in hours plus minutes (e.g. ONE PLUS THIRTY equals one hour and thirty minutes).
PUSH (FREQ/ CHANNEL/TAD)	Switch to designated frequency, channel or TAD. Without response to the speaker.
SCRAMBLE	Take off as quickly as possible. (Usually followed by the appropriate instructions).
TALLY	Sighting of a target, bandit, bogey, landmark or enemy position; opposite of NO JOY.
TUMBLEWEED	Limited situation awareness; no joy; blind; a request for information.

VISUAL	Sighting of a friendly aircraft ground position; opposite of BLIND.