



# In-Flight Guide

## 388th Virtual Fighter Squadron

Current As Of (CAO):

**2019-12-13**

**Version 1.0**



# Authentication table: AET-100

Version 1.0

	A B C	D E F	G H	I J	K L	M N O	P Q R	S T U	V W	X Y Z
A	K W G	D I O	M B	H U	X L	Z E A	J F R	N V S	T C	Q Y P
B	J A R	N B E	G C	O Y	V H	P L K	M D T	Z Q I	S W	U F X
C	W I D	A H Z	E K	L M	R F	N J U	O V G	X S T	C Y	B P Q
D	B A T	F D J	I G	Z E	W S	K H X	O N Y	P R L	U M	Q C V
E	S D Z	J X P	B E	M Y	H U	A W L	K F R	Q C G	T N	V I O
F	L I A	W F D	E H	K Z	M J	O G R	T U Q	V N X	P S	Y B C
	0	1	2	3	4	5	6	7	8	9
G	B Y T	C S Z	H K	G X	N I	R F V	D J W	L A M	P E	O Q U
H	H F B	Z S D	C I	A G	Y K	R L P	U M V	N Q J	X T	E W O
I	S Z M	D O C	G H	F I	P T	N K R	J A W	V E Q	L Y	U X B
J	R E L	Q A Z	K I	T H	F O	X G W	D Y U	C N V	S P	M B J
K	R C K	I L H	Q T	U S	Y J	F V B	W X N	G M Z	P E	O D A
L	Z B S	H C D	G F	I K	A L	R J M	P N V	Q Y T	W U	X O E
	0	1	2	3	4	5	6	7	8	9
M	E O X	U W T	Y Q	V N	P M	J R L	A K I	F G D	C H	S B Z
N	I F G	D C H	S B	Z E	O X	U W T	Y Q V	N P M	J R	L A K
O	P M N	E C K	I S	G O	D W	A Y Z	H F B	J T V	R Q	X U L
P	N V Q	Y T W	U X	O E	Z B	S H A	P M J	R L K	I F	D C G
Q	G D F	C I H	K S	A B	L Z	R J E	O X U	W T Y	Q V	N P M
R	M P J	N R V	Z Q	L Y	B T	S W H	U A K	X C O	G D	E F I
	0	1	2	3	4	5	6	7	8	9
S	B H D	F E X	W Y	V P	J R	A I G	C S Z	O U T	Q N	M L K
T	D F K	L J P	V Y	W X	E Z	S C G	I A R	M N Q	T U	O B H
U	M P N	D Z B	S H	C V	Q Y	G K R	J W U	X F E	L O	T I A
V	I K A	M P N	V Q	L R	J Y	T W U	X O E	Z B S	H C	D G F
W	D G F	I W B	Z V	K A	L S	H C R	J M P	Q Y T	O E	U X N
X	A L R	J M F	Z B	S Q	C D	I K G	H W U	P N V	E Y	T O X
Y	T M P	N B S	H C	W U	X K	I A L	R J O	E Z V	Q Y	D G F
	0	1	2	3	4	5	6	7	8	9

AET = Authentication Encryption Table

COMPLEXITY (Uneven)

LUMBERJACK (Even)



## STARTUP 1 / 4

GROUND POWER.....	CONNECT
SKIN, BORT, LOADOUT, FUEL .....	SET
INTERNAL LIGHTS .....	SET
FUEL MASTER .....	ON – GUARDED
ENGINE FEED .....	NORM
EPU .....	NORM – GUARDED
ENG CONT .....	PRI – GUARDED
THROTTLE .....	OFF
LANDING GEAR .....	DOWN and LOCKED
HOOK .....	UP
MASTER ARM .....	SAFE (OFF)
AIR SOURCE .....	NORM
MAIN PWR .....	BATT
Verify FLCS RLY light ON	
FLCS PWR TEST .....	TEST - HOLD
Verify ACFT BATT TO FLCS, FLCS PMG & FLCS PWR (4) lights ON	
MAIN PWR .....	MAIN PWR
Verify ELEC SYS, HYD/OIL PRESS, FLCS RLY, SEC & ENGINE lights ON	
EPU GEN & EPU PMG lights .....	Confirm OFF
EXTERIOR LIGHTS.....	POSITION LIGHT- FLASH
C&I KNOB.....	BACKUP
AUDIO PANEL 1&2.....	AS REQUIRED
UHF BACKUP.....	SET & CHECK-IN
AVIONICS.....	ON
MMC, ST STA, MDF, UHF, DL, GPS	
INS TO ALIGN.....	ALIGN NORM
MIDS LVT.....	ON



# STARTUP 2 / 4

FLIGHT CLOCK.....START	ENGINE START
L&R HARDPOINT..... AS REQ	CANOPY.....LOCKED
FCR.....ON	JFS TO START 2..... VERIFY LIGHT
RADAR ALTIMETER...STBY	RPM 20%..... THROTTLE TO IDLE
DED INS.....ENTER DATA	RPM 55%..... VERIFY JFS OFF
HUD.....AS REQ	RPM 60%..... VERIFY ENG. WARN OFF
C&I.....UFC	RPM 15-70%..... VERIFY HYD/OIL OFF
IFF MASTER KNOB.. SET&STANDBY	ENGINE IDLE CHECK
*DTC..... LOAD	FUEL FLOW..... 700-1700 PPH
CAT 1 / CAT 3.....AS REQ	OIL PRESSURE..... MIN 15 PSI
UFC RADIO..... SET & CHECK-IN	NOZZLE POSITION.... > 94%
ATIS.....CHECK	RPM.....62-80%
AVIONICS PROGRAM	FTIT..... < 650 DEGRESS C
SELECTIVE JETTISON SET	HYD PRESSURE A&B... 2850-3250
SMS.....PROGRAM	AFTER START
ALOW.....SET	GROUND POWER..... DISCONNECT
MSL.....SET	TESTS..... PROBE, FIRE MAL& IND
BINGO..... SET JOKER	FLIGHT CONTROLS... CYCLE & FREE
*CRUISE.....CHECK	FLCS..... RUN BIT
TACAN.....PREP	SPEED BRAKE..... CYCLE
*IDM.....CHECK	RWR ON / TEST/ STANDBY
BULLSEYE..... CHECK	&CMDS.....
STEERPOINTS.....PROGRAM	HMDS..... ON &STOW
EGI CHECK	NVG..... PREP & STOW
ALIGNED..... SET NAV	FUEL QUANTITY..... TEST & SET NORM
REPORT READY..... ALPHA CHECK & ENGINE START	EPU FUEL QUANTITY... 95-102%
	AIR REFUEL SWITCH CYCLE & CHECK
	BACKUP AIR
	UNSAFE



## STARTUP 3 / 4

### DBU CHECK

DIGITAL BACKUP SW.....	BACKUP
DBU ON WARNING LIGHT.....	CHECK ON
OPERATE CONTROLS.....	CHECK RESPONSE
DIGITAL BACKUP SW.....	OFF
DBU ON WARNING LIGHT.....	CHECK OFF

### TRIM CHECKS

TRIM AP DISC SW.....	DISC
STICK TRIM BUTTONS ACTION.....	CHECK NO RESPONSE
TRIM AP DISC SWITCH .....	NORM
STICK TRIM BUTTONS.....	CHECK INDICATORS & CENTRE
RUDDER TRIM CHECK.....	CHECK AND CENTER

### EPU CHECK

EPU GEN AND EPU PMG LIGHTS.....	CHECK OFF
OXYGEN.....	SET 100%
TOE BRAKES.....	ENGAGE
EPU SWITCH.....	OFF THEN NORM
THROTTLE .....	SET 80%
EPU/GEN TEST SW.....	EPU/GEN AND HOLD
EPU AIR LIGHT.....	VERIFY ON
EPU GEN AND EPU PMG LIGHTS.....	VERIFY OFF
FLCS POWER.....	ON
VERIFY EPU RUN LIGHT ON.....	WITHIN 5 SECONDS
EPU GEN TEST SW.....	OFF (RELEASE)
THROTTLE .....	IDLE
OXYGEN.....	NORM



## STARTUP 4 / 4

### BEFORE TAXI

ALTIMETER.....	SET
INS.....	CHECK NAV
TGP.....	CHECK STOWED
MFD'S.....	AS REQ
GROUND CREW.....	CHECK CLEAR
POSITION LIGHTS	STEADY
REPORT.....	READY TAXI
TAXI BRIEF (FLIGHT LEAD).....	COMPLETE
NOSE WHEEL STEERING.....	ON
TAXI LIGHTS	ON
BRAKES .....	CHECK

### HOLD SHORT

PROBE HEAT.....	ON
TRIM .....	AS REQ
IFF.....	NORM
ENGINE CONT.....	VERIFY PRI
SPEED BRAKE.....	CLOSED
EJECTION SEAT.....	ARM
TACAN .....	ON
RADAR ALTIMETER.....	ON
EXTERNAL TANKS.....	VERIFY FEEDING
FLIGHT CONTROL.....	FREE & CLEAR
OIL PRESSURE.....	CHECK PSI
TAKE OFF BRIEF (FLIGHT LEAD).....	COMPLETE
ANTI COLLISION & LANDING LIGHT	ON (LINE UP)



# NORMAL OPERATIONS

TAKE OFF	DECENT
WIPEOUT.....CLEAR	FUEL CHECK..... BALANCE
RPM.....90%	LANDING LIGHT..... ON
ENG. CHECK.....GREEN	SWITCHES..... SAFE
NWS.....OFF (70KTS)	TGP..... STOW
CLIMB OUT	ATIS..... CHECK
GEAR..... UP	ILS/TACAN..... PROGRAM
ENGINE ..... GREEN	CRS/HDG..... SET
FUEL.....CHECK FEED	FINAL SPEED..... COMPUTE
LANDING LIGHT..... OFF	CLEAR COMPLETE
DRIFT CO.....AS REQ	PROBE HEAT..... OFF
BACKUP AVIONICS.CHECK	ECM PWR..... OFF
AAR	SPEED BRAKES..... CLOSED
MASTER ARM.....SAFE	EJECTION SEAT ..... SAFE
LASER ARM..... SAFE	IFF..... STBY
SMS..... VERIFY WPN SAFE	LANDING LIGHTS ..... TAXI
CMDS.....OFF	ANTI COLLISION..... OFF
TACAN..... AS REQ	SHUTDOWN
EMITTERS..... AS REQ	EGI..... OFF
LIGHTS.....AS REQ	AVIONICS..... OFF
	THROTTLE..... OFF
	JFS RUN LIGHT..... CHECK
	EP GEN/EPU PMG..... OFF
	MAIN PWR..... OFF
	OXYGEN..... OFF
	CANOPY..... OPEN



## COMBAT OPERATIONS

### FENCE

MASTER MODE.....	AS REQ
MASTER ARM.....	ARM
RADAR.....	AS REQ
TACAN.....	AS REQ
LASER ARM.....	AS REQ
CHAFF/FLARES.....	SET
* ECM JAMMER.....	AS REQ
RWR.....	CHECK ON
HMDS.....	ON
IR COOL.....	SET
TGP.....	AS REQ
AGM65 PWR.....	AS REQ
A-G WEAPONS.....	CHECK RELEASE PARAMTERS
THREAT&MSL VOLUME.....	SET
STORES CONFIG....	CONFIG
LIGHTS.....	AS REQ

### A-G CHECK

A-G MODE.....	SELECT
MASTER ARM.....	ARM
LASER ARM.....	AS REQ
ORDNANCE.....	SELECTED
PROFILE.....	SET
CMDs .....	SET
SOI / SPI.....	SET
CCIP / CCRP.....	AS REQ
ATTACK BRIEF.....	COMPLETE
EGRESS	
OPS CHECK.....	PERFORM
BUDDY CHECK....	PERFORM
BDA/INFLIGHT REP.....	TRANSMIT





## Presets ATRM v1.0

COMM 1 - UHF				COMM 2 -VHF			
1	310.0		Internal PRI	1			Internal SEC
2	237.0	BLUE 3	Check-in	2	126.1		Al Dahfra GND
3	228.0	ORANGE10	A-A #1	3	126.2		Al Dahfra TWR
4	249.0	GREEN4	A-G#1	4	127.1		Al Dahfra CNTRL
5	234.0	OCHRE 9	Inflight report	5	136.25	INDIGO6	AWACS backup
6	242.5	OCHRE 4	Range 1	6	132.75	LEMON3	Range 3 SEC
7	239.75	INDIGO 4	Range 2	7	120.25	OCHRE5	Range 4 SEC
8	243.75	CHERRY 8	Range 3	8	136.75	OCHRE 8	Range 5 SEC
9	225.75	INDIGO 10	Range 4	9	139.75	AQUA10	Range 6 SEC
10	235.75	AMBER 4	Range 5	10	130.7	YELLOW 6	Range 9 SEC
11	233.25	BROWN 7	Range 6	11	151.0	AR201	ARCO
12	234.75	PINK 7	Range 7	12	144.0	AR402 (R)	ARCO (RED)
13	230.5	INDIGO 11	Range 8	13	143.0	AR403 (R)	ARCO (RED)
14	236.5	LEMON 7	Range 9	14	150.0	AR101	ARCO
15	245.0	RED 5	Range10	15	118.2	TWR	Ras Al Kaimah(R)
16	228.75	GRAY 5	Range 11	16	124.2	TWR	Khasab (R)
17	242,25	ORANGE 2	Range 12	17	128.2	TWR	Sas Al Nakheel(R)
18	235.0	WHITE 11	MOA 1	18	119.2	TWR	Al Ain
19	246.25	ORANGE 7	MOA 2	19	121.2	TWR	Al Minhada
20	230.0	YELLOW 6	MOA 3	20	119.6	TWR	Liwa



## Template format: Retasking brief

<b>TASK / MISSION</b>	
<b>LOCATION/ KILLBOX NAME AND STATUS</b>	
<b>ENEMY SITUATION/ TARGET</b>	
<b>THREAT</b>	
<b>FRIENDLIES</b>	
<b>JTAC/FAC(A)/SCAR (OPTIONAL)</b>	
<b>ORDNANCE</b>	
<b>REMARKS</b>	

Retasking brief is used from AWACS to retask a flight to a new, more important mission during an event.



## Template format: **Fighter Check-in**

Mission number	
Number and type AC	
Position and altitude	
Ordnance	
Time on station	
Capabilities	
Abort code	

Fighter check-in is used by CAS flights to a JTAC/FAC(A) or from a AR flight to a SCAR flight



## Template format: Area of Operations update

GFC Intent for CAS	
Threat	
Target/Enemy	
Friendly	
Artillery	
Clearance authority	
Ordnance requested	
Restrictions	
Hazards	
Remarks	

AO update is used by JTAC/FAC(A) to give a situation update for CAS missions



# Template format: CAS brief

GAMEPLAN	
Type of Control	
BOT/BOC	
Ordnance	
Method	
9 LINE	
IP	
Heading	
Distance	
<u>Elevation</u>	
Target	
<u>Location</u>	
Mark	
<u>Friendlylies</u>	
Egress	
Remarks/Restrictions	
Remarks	
<u>Restrictions</u>	

CAS brief provides targeting information during CAS missions.



## Template format: **SCAR brief**

Gameplan/Flow	
Target description	
Location	
Elevation	
Area weather	
Current threat	
Additional information	

SCAR brief is used to coordinate AR flights and give necessary information to AR flights



# Template format: In Flight Report

132 <sup>nd</sup> INFLTREP	INFORMATION
Callsign	
Mission Number	
Target Location	
Time on Target	
Results (BDA)	
Remarks	

In flight Report is used to provide BDA and situation updates to AWACS during a mission.



## Template format: **Handover brief**

<b>132<sup>nd</sup> Battle handover brief</b>	<b>INFORMATION</b>
(1) Friendly situation	
(2) Threat update	
(3) Enemy situation / targets	
(4) Control Measures in effect	
(5) Clearance authority (if applicable)	
(6) Frequency and callsigns	

Handoverbrief is used to brief either a new flight coming on station, assuming the task/role/responsibility of the flight on station or to brief the second element during YO-YO operations





# Transmission authentication: TAT-101

Version 1.0

0000 0600 1200 1800	0100 0700 1300 1900	0200 0800 1400 2000	0300 0900 1500 2100	0400 1000 1600 2200	0500 1100 1700 2300
00 - AQ	00 - SX	00 - BE	00 - QI	00 - AW	00 - MH
02 - QE	02 - BU	02 - ST	02 - SO	02 - QL	02 - MD
04 - CE	04 - ML	04 - MW	04 - BQ	04 - CH	04 - QW
06 - ZR	06 - MZ	06 - AD	06 - AI	06 - CV	06 - ZN
08 - SY	08 - CD	08 - BI	08 - SW	08 - QC	08 - AX
10 - BY	10 - CF	10 - SU	10 - QD	10 - ZJ	10 - QT
12 - MT	12 - BD	12 - BA	12 - QF	12 - SM	12 - MQ
14 - MY	14 - CW	14 - AO	14 - CY	14 - CO	14 - SE
16 - QY	16 - ZQ	16 - BT	16 - ZG	16 - SD	16 - BF
18 - MA	18 - BL	18 - CR	18 - MR	18 - ZD	18 - QO
20 - AT	20 - CI	20 - QQ	20 - AB	20 - SP	20 - ZX
22 - AY	22 - BX	22 - AG	22 - AN	22 - SK	22 - MF
24 - MS	24 - MU	24 - SS	24 - SV	24 - QG	24 - BC
26 - BO	26 - SR	26 - ZA	26 - AU	26 - BN	26 - BS
28 - BP	28 - AE	28 - AA	28 - MC	28 - ZM	28 - ZK
30 - AF	30 - ZI	30 - CP	30 - ZB	30 - AP	30 - MN
32 - AH	32 - QR	32 - QP	32 - ZU	32 - SH	32 - QH
34 - MP	34 - BZ	34 - QA	34 - AS	34 - ZC	34 - CB
36 - SL	36 - BR	36 - QS	36 - MX	36 - SQ	36 - BW
38 - CA	38 - ZL	38 - ZS	38 - BB	38 - SF	38 - SZ
40 - CS	40 - MJ	40 - MO	40 - QJ	40 - CG	40 - QZ
42 - MG	42 - BG	42 - BH	42 - QK	42 - SN	42 - CJ
44 - QN	44 - ZT	44 - AJ	44 - ZE	44 - ZY	44 - AL
46 - AC	46 - AM	46 - AK	46 - SJ	46 - QX	46 - QV
48 - MV	48 - SG	48 - ZO	48 - QU	48 - ZH	48 - CQ
50 - BM	50 - ZF	50 - SC	50 - CX	50 - ZW	50 - MB
52 - SA	52 - ZV	52 - CK	52 - CC	52 - BV	52 - QM
54 - CT	54 - AR	54 - CL	54 - SI	54 - CM	54 - MK
56 - MI	56 - BJ	56 - CZ	56 - BK	56 - QB	56 - SB
58 - ZP	58 - AZ	58 - MM	58 - AV	58 - CU	58 - ME

TAT=Transmission Authentication Table



## 132nd Frequencies

	1	2	3	4	5	6	7	8	9	10	11	
Blue	123.000	238.250	237.000	128.000	31.25	118.500	117.500	226.250	117.000	30.75	125.000	Blue
Green	30.00	45.00	120.000	229.000	230.250	248.750	231.500	32.25	137.750	123.750	32.50	Green
Red	140.250	31.00	35.25	127.100	245.000	30.50	231.250	118.000	134.100	243.500	119.250	Red
Yellow	227.500	128.100	237.750	34.00	121.250	230.000	121.100	225.000	31.75	133.000	121.750	Yellow
Orange	122.000	242.250	243.250	129.000	117.750	225.250	246.250	32.75	119.500	228.000	229.750	Orange
Purple	248.500	127.000	134.250	130.250	38.25	131.000	236.000	237.500	133.750	138.100	127.750	Purple
White	126.250	137.250	238.500	126.000	237.250	117.250	121.000	118.750	120.500	119.000	235.000	White
Gray	35.00	248.000	128.750	122.100	228.750	235.250	135.250	242.750	118.250	122.250	30.25	Gray
Pink	233.000	130.100	124.000	128.250	125.750	34.50	234.750	34.75	234.500	244.750	238.000	Pink
Brown	248.250	138.750	136.000	33.50	132.250	232	233.250	231.750	120.750	228.500	137.000	Brown
Violet	240.000	135.100	134.750	232.500	232.750	32.00	130.750	129.250	132.000	228.250	136.100	Violet
Amber	124.750	238.750	227.000	235.750	244.500	226.000	36.50	123.250	126.750	131.100	124.100	Amber
	1	2	3	4	5	6	7	8	9	10	11	
Aqua	33.75	129.750	226.750	131.250	231.000	247.750	133.100	233.750	236.250	139.750	36.75	Aqua
Cherry	121.500	31.50	242.000	35.75	243.000	138.000	132.100	243.750	239.250	131.750	244.250	Cherry
Gold	247.000	134.000	240.500	129.100	36.25	229.250	235.500	241.500	127.250	35.50	245.500	Gold
Coral	124.250	33.25	138.250	240.250	135.750	241.750	33.00	139.100	239.000	229.500	225.500	Coral
Indigo	137.100	119.750	233.500	239.750	245.750	136.250	139.000	246.500	140.750	225.750	230.500	Indigo
Lemon	34.25	133.50	132.750	123.100	36.00	241.250	236.500	37.50	234.250	135.000	37.75	Lemon
Lime	247.250	126.100	246.000	244.000	230.750	37.00	232.250	245.250	38.75	130.000	247.500	Lime
Maroon	139.250	38.00	239.500	122.750	39.25	39.50	240.750	241.000	37.25	226.500	140.000	Maroon
Ochre	227.750	236.750	227.250	242.500	120.250	39.00	38.50	136.750	234.000	125.250	39.75	Ochre
Olive	140.100	246.750	141.000	141.750	141.100	150.000		149.0	141.250	151.000		Olive
Black	35.650	25.375	48.550		36.300	37.800	38.200	39.800	40.400	41.000	36.333	Black
Bronze	309.000	140.700	130.700	135.700		306.000	132.700	310.000				Bronze
Copper		134.700		141.700	310.900	309.500			307.000	133.700		Copper
Silver	131.700	305.000	310.500	308.000			136.700		142.700	309.900		Silver
	1	2	3	4	5	6	7	8	9	10	11	



## Contracts

### TAXI:

- Trail

### LINEUP:

- Echelon lineup (2ship)
- 3 in the slot (4ship)

### TAKE-OFF / DEPARTURE /REJOIN

- 20 sec seperation
- AB off at 300kts
- 350kts
- Finger 4, #2 Left

### CRUISE

- 350kts or M0.8 (what is lower)
- Turns: 30° bank

### RECOVERY

- OHB
- 5 sec interval in the break

### AIR COMBAT READINESS

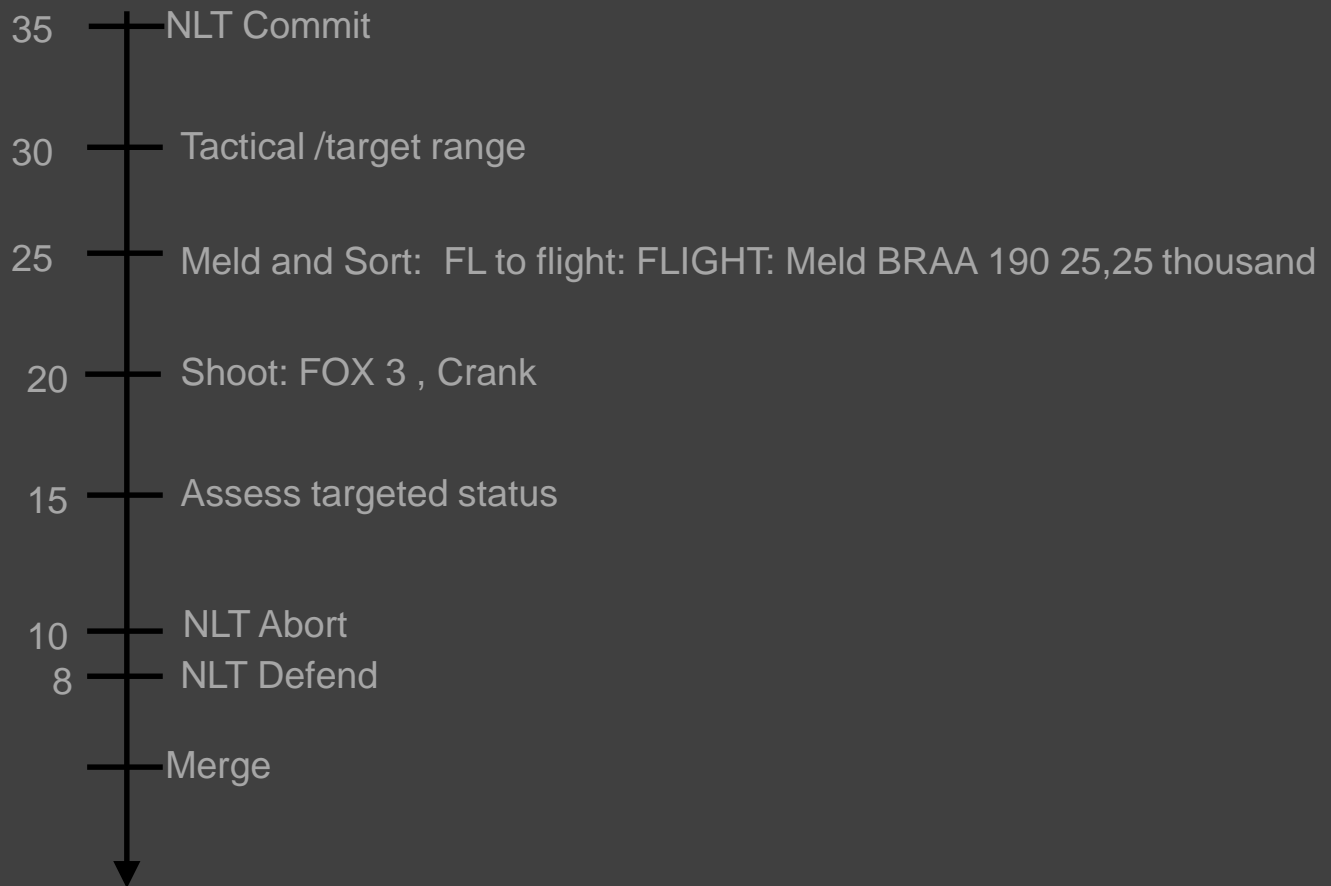
- 450 Kts/M0.70 defensive Combat spread
- 500-1000ft vertical seperation
- Energy sustaining turns

### TARGETING

- 1: Lead, High, Left
- 2: Trail, Low, Right
- 3: Maintain SA; support



## A-A BVR Timeline



### 4 Assumptions:

**Visual:** meaning they have sight of the other fighter

**No Joy:** meaning they do not have a tally on any unknown or hostile aircraft

**Naked:** meaning the fighters are not spiked by hostile radars

**Clean:** meaning the fighter has no radar contacts

#2 report if this changes and it have not been picked up by lead.

### Brevity

**MELD:** Cease radar sanitization and focus radar on single target. Set :

-Range to 40 NM

-Reduce to 80 degrees Azimuth

### Radar:

**#1** High and far

**#2** Low and near

### Sorting:

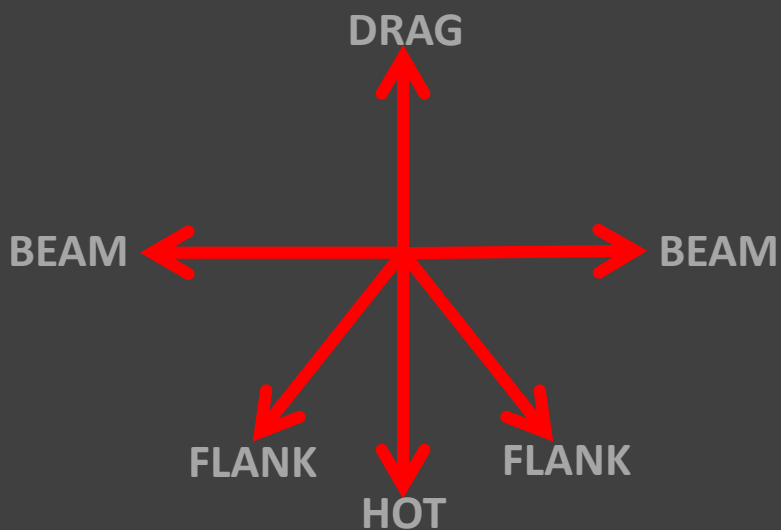
**#1** : Left, Lead, High

**#2:** Right, Trail, Low

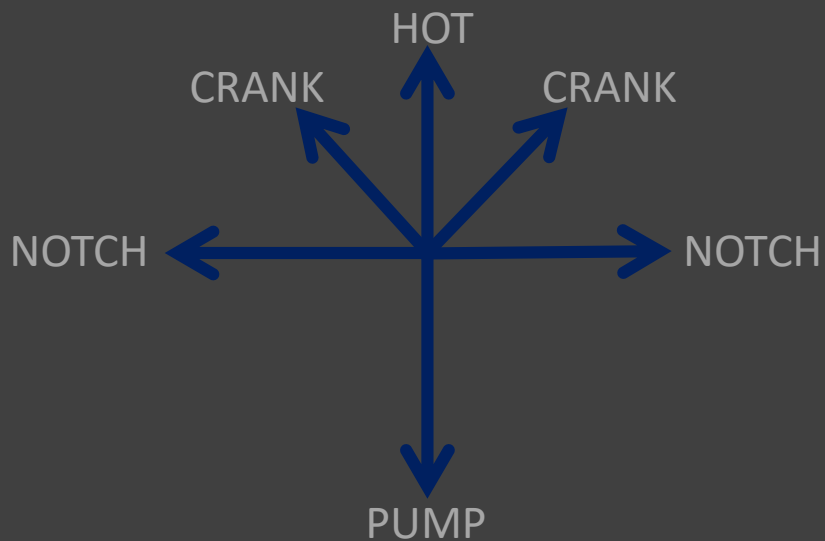


# Reference

## Enemy's relation to you



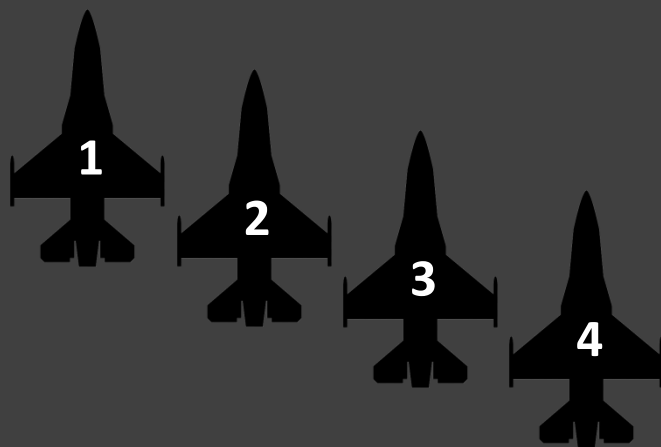
## Your relation to enemy



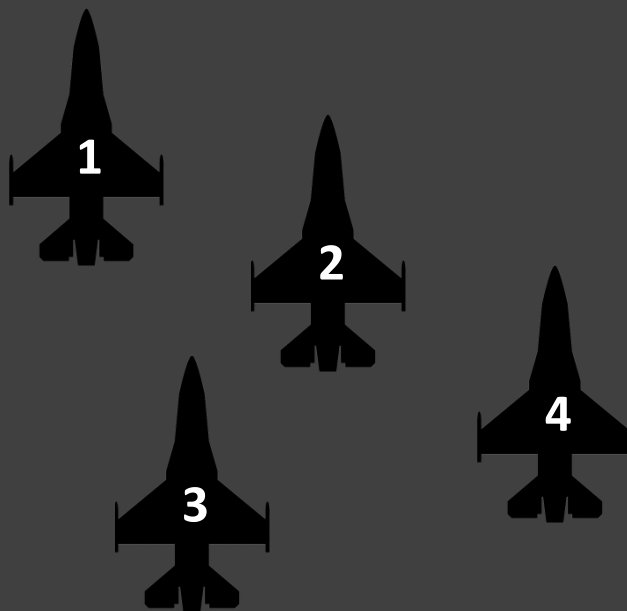


# Lineups

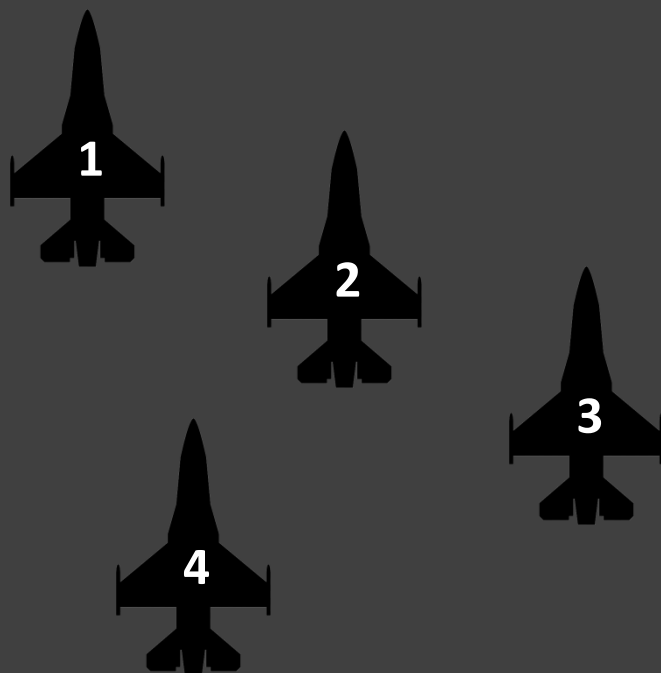
## Echelon



## 3 in the slot



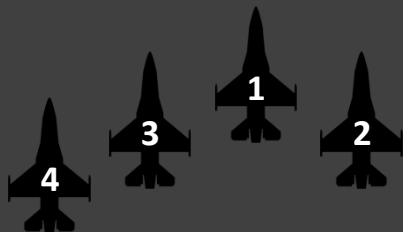
## 4 in the slot



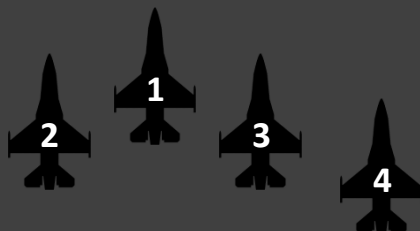


# Formations

Finger 4 - Left



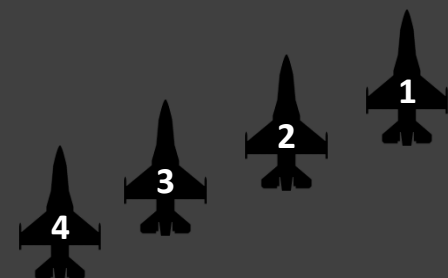
Finger 4 - Right



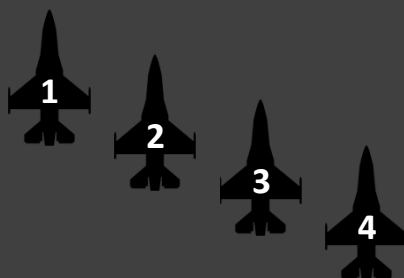
Line Abreast / Combat Spread



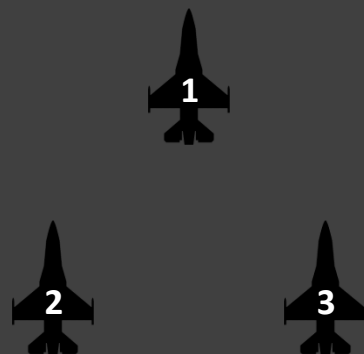
Echelon Left



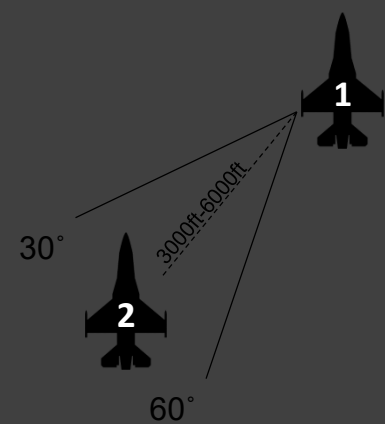
Echelon Right



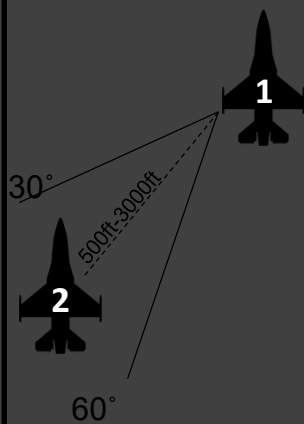
3ship VIC



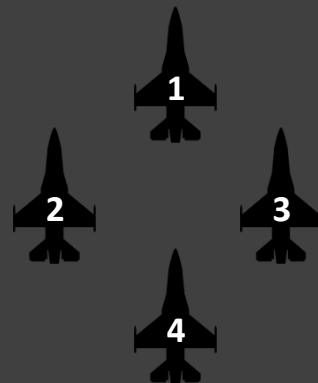
2ship Wedge



Fighting Wing



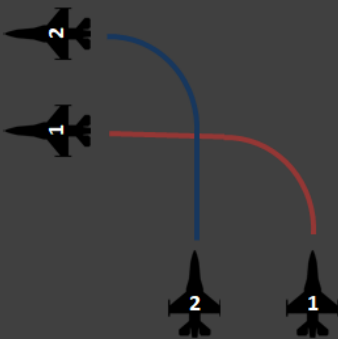
Diamond



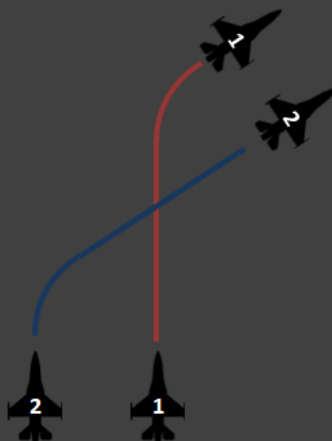


## Turns

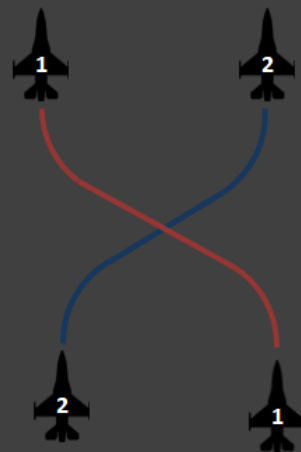
TAC-Left 90°



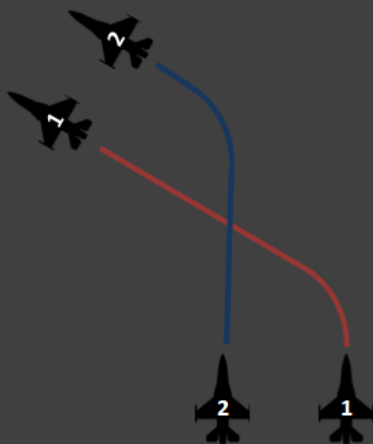
TAC-Right 45°



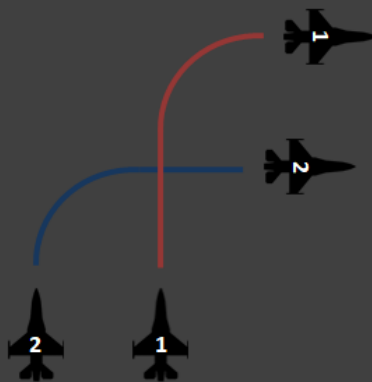
Shackle



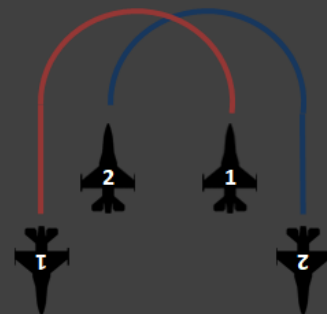
TAC-Left 45°



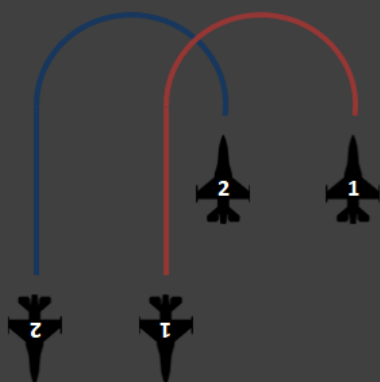
TAC-Right 90°



Cross Turn



Hook Left



Hook Right

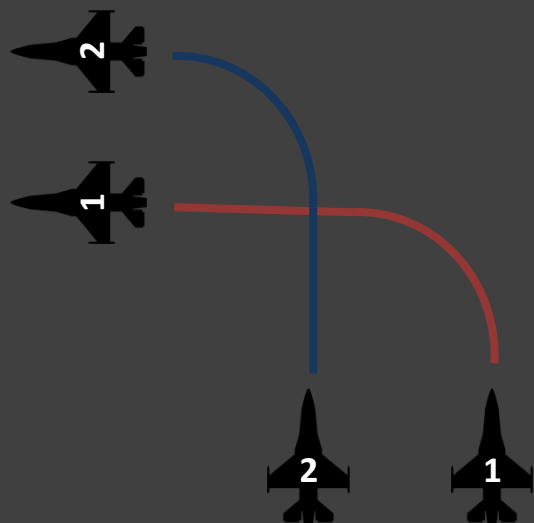




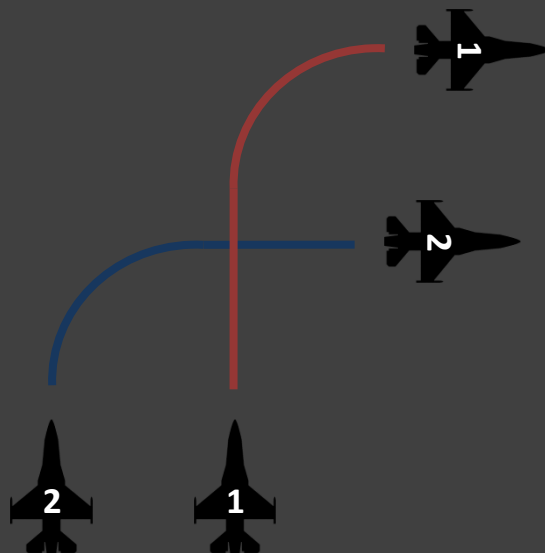


# Turns page 1

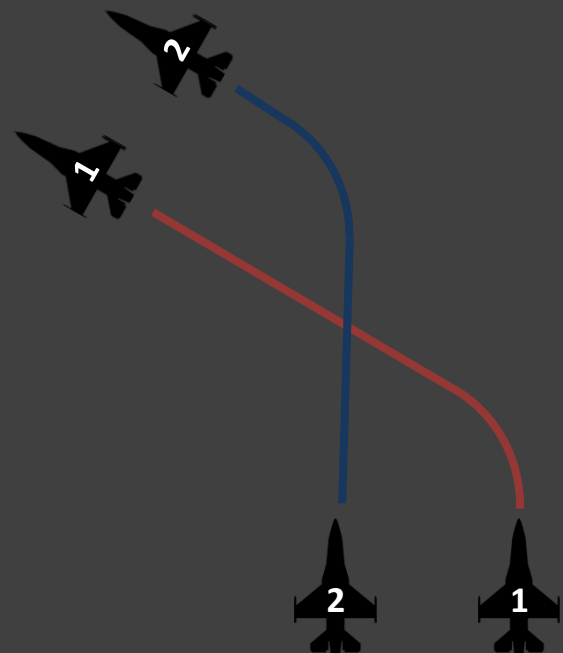
TAC-Left 90°



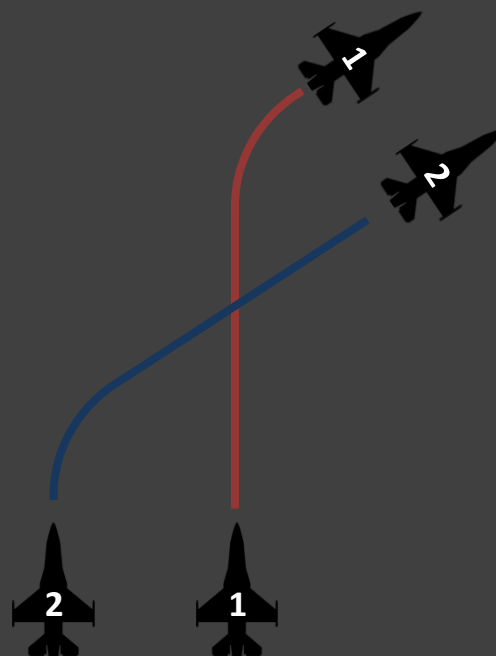
TAC-Right 90°



TAC-Left 45°



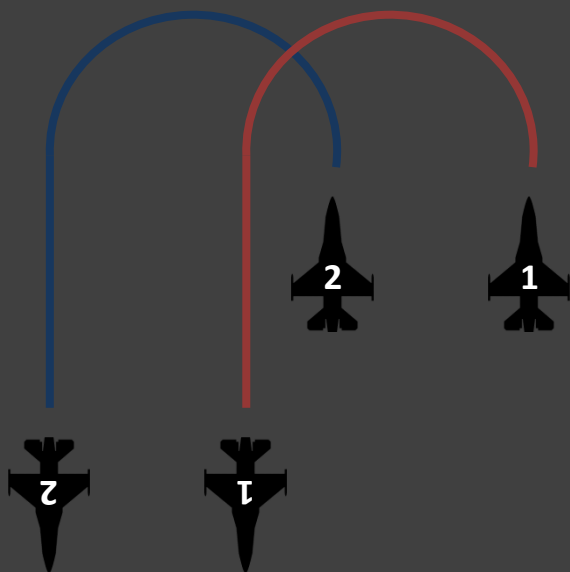
TAC-Right 45°



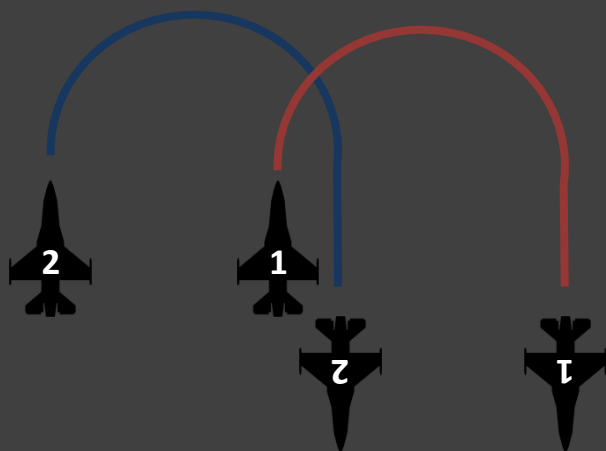


# Turns page 2

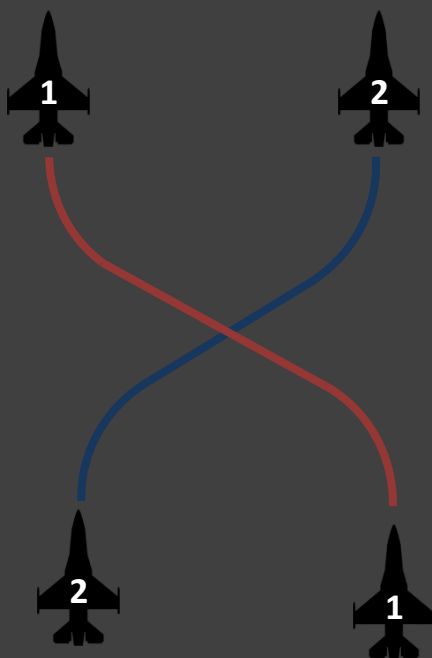
Hook Left



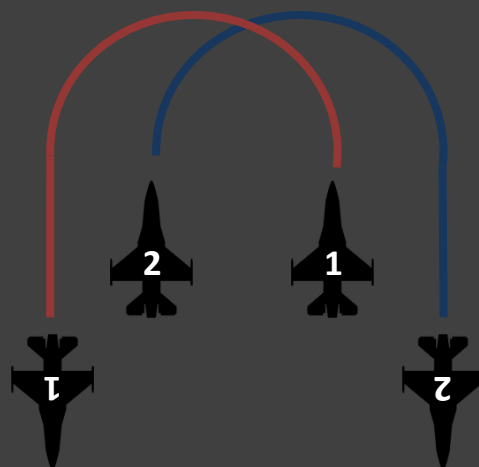
Hook Right



Shackle



Cross Turn





# Knots and nautical miles

Knot	Nautical mile per minute	Knot	Nautical mile per minute
200	3.3	400	6.7
210	3.5	410	6.8
220	3.7	420	7.0
230	3.8	430	7.2
240	4.0	440	7.3
250	4.2	450	7.5
260	4.3	460	7.7
270	4.5	470	7.8
280	4.7	480	8.0
290	4.8	490	8.2
300	5.0	500	8.3
310	5.2	510	8.5
320	5.3	520	8.7
330	5.5	530	8.8
340	5.7	540	9.0
350	5.8	550	9.2
360	6.0	560	9.3
370	6.2	570	9.5
380	6.3	580	9.7
390	6.5	590	9.8



## Template format: **SCRAMBLE**

This is \_\_\_\_\_ with an \_\_\_\_\_ SCRAMBLE  
*(Controlling Agency)* *(QRA/CAS/AR/CSAR)*

For \_\_\_\_\_, Time is \_\_\_\_\_Z, I authenticate \_\_\_\_\_  
*Airbase* *Time*

Scramble \_\_\_\_\_, \_\_\_\_\_ X \_\_\_\_\_  
*Flight callsign* *Number* *Type of AC*

Vector \_\_\_\_\_, at \_\_\_\_\_  
*Course* *Flightlevel or Feet*

Proceed to \_\_\_\_\_  
*Area/Coordinates/Killbox/Location*

Contact \_\_\_\_\_ On \_\_\_\_\_ Backup \_\_\_\_\_  
*C2 Agency* *Frequency* *Frequency*

Remarks: \_\_\_\_\_



# Risk Estimate Distances (RED)

Weapon	Description	0,1 % PI
MK-82 contact	500 lb bomb	300m
MK82 HD contact	500 lb bomb/ high-drag	300m
MK84 contact	2000 lb	350m
CBU-87	Cluster	350m
CBU-103	Cluster	300m
GBU-12	500 lb Laser Guided	200m
GBU-10	2000 lb Laser Guided	250m
GBU-38	500 lb JDAM	200m
GBU-31	2000 lb JDAM	250m
AGM-65	Maverick 125 lb warhead	150m
M151, M229, M261	2.75" Rockets medium altitude	250m
M151, M229, M261	2.75" Rockets low altitude	300m
GAU-8	30mm Gatling gun	75m
2A42	30mm KA-50	75m
UPK 23-250	23mm Gunpod KA50	50m
S-8	80mm Rocket KA-50	200m
S-13 OF	122mm Rocket KA50	250m
9K121 VIKHR	130mm Missile KA50	100m
KH-25ML	275mm Missile KA50	175m
M134 Minigun	7.62X51 gatling UH-1	50m



# Target Location Error Category (TLE)

TLE CAT 1	TLE CAT 2	TLE CAT 3	TLE CAT 4	TLE CAT 5	TLE CAT 6
0-6m	7-15m	16-30m	31-91m	92-305m	Above 305m