

# BVR TIMELINE

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\* Following timelines and tactics are only available for Korean Training theater for FalconBMS4.34 and not for real use.

- **MTR(Minimum Targeting Range)**

The range flight member share into a group to ensure group elimination or support planned intercept flow. MTR is also a decision tool for flight leads to directly target wingman (greater than MTR) or flight leads inside of MTR

*eg: "Wall, Skate, #1,2 Target East Group #3,4 Target West Group, #2,4 Sort Leader."*

- **TR(Transition Range)**

The minimum range at which the AIM-120 must be launched in order to achieve an active state and be out no later than DOR.

- **DOR(Desired Out Range)**

Range from the closest group where a fighter's "out" maneuver will defeat any weapons in the air or still on the jet and preserve enough distance to recommit with sufficient time to re-engage with L-D tactics

- **DR(Decision Range)**

The minimum range at which an aircraft can execute the briefed notch maneuver, remain there for a pre-briefed period of time in an attempt to defeat spikes, and then execute an abort or exit maneuver. This will kinematically defeat any missiles shot at the fighter and momentarily keep the fighter outside the threat's max stern WEZ

$DR = STERN\ WEZ + Adversary\ closing\ range\ during\ 15sec\ notch + Margin$

- **MSR(Minimum Shot Range)**

The minimum range at which the MRM must be launched in order to achieve an active state and be out no later than MAR.

- **MAR(Minimum Abort Range)**

The range at which an aircraft can execute an MDS-specific standard abort maneuver and initially kinematically defeat any missiles and momentarily remain outside the adversary WEZ

$MAR = Max\ F-POLE\ of\ adversary's\ shot + Your\ Turn\ Radius + Margin$

- **MRR(Minimum Recommit Range)**

The minimum range at which the Fighter recommit, target, and employ MRM while turning and remain outside of STERN WEZ. Assuming threat is HOT.

- **STERN WEZ**

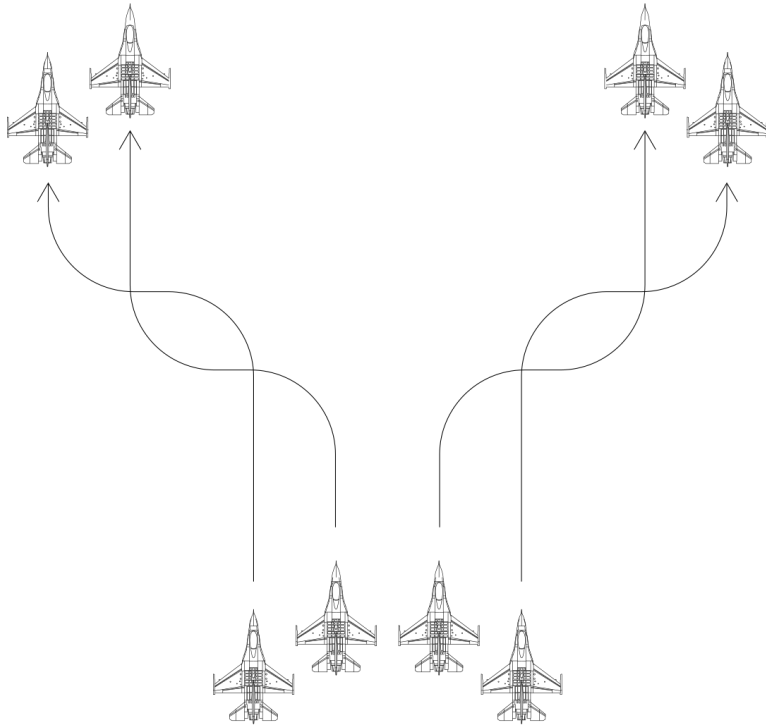
The maximum range at which an adversary's weapons can be effectively shot at fighters.

$STERN\ WEZ = Range\ where\ adversary's\ shot\ hits\ you\ from\ your\ behind.$

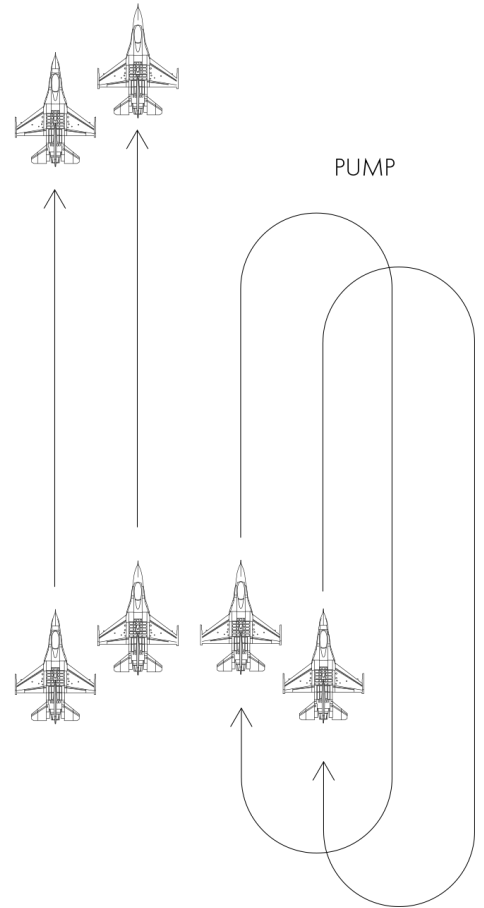
## FORMATION

- **PUMP:** A briefed maneuver to minimize closer to threat or geographical boundary with the intent to reengage. Initiates Grinder tactic. Note: DOR is minimum pump range

### WALL

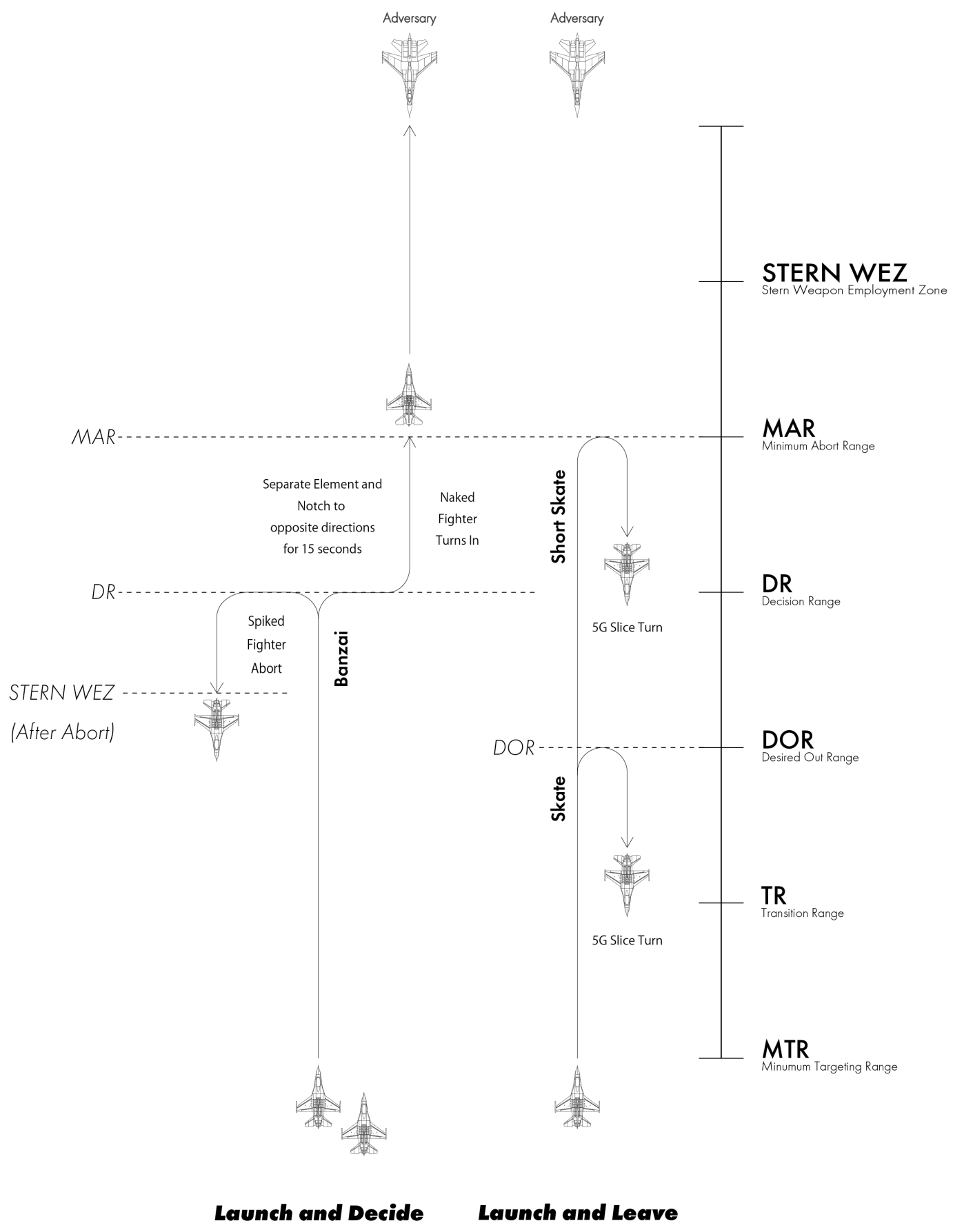


### GRINDER



# FLOW

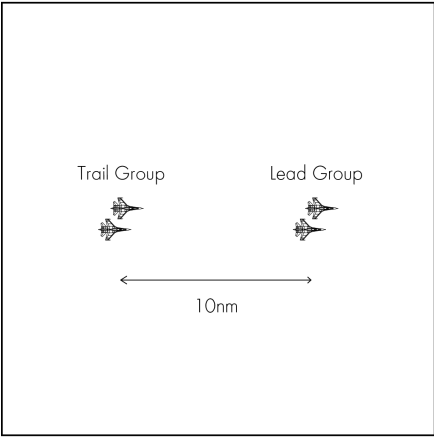
- Flight leads are responsible for maintaining an appropriate intercept time line for effective tactics execution.



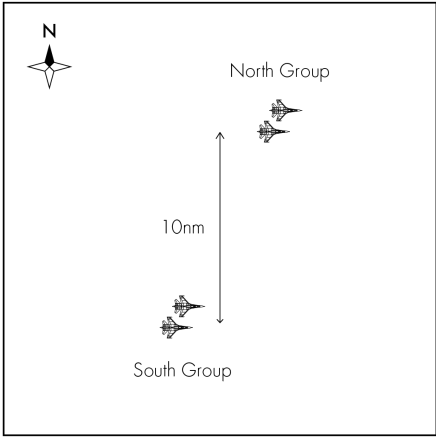
# TARGETING

- A GROUP is any number of air CONTACTs within 3 nautical miles (nm) in azimuth and range of each other.
  - CONTACT is an individual radar return within a GROUP.
  - SINGLE CONTACT is the assumed STRENGTH for all GROUPs. More CONTACTs are specified (e.g., SINGLE GROUP TWO CONTACTs).

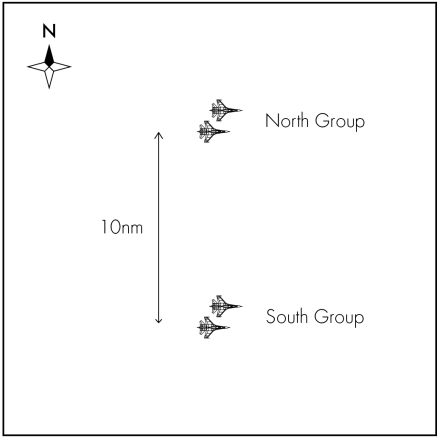
## GROUP PICTURE



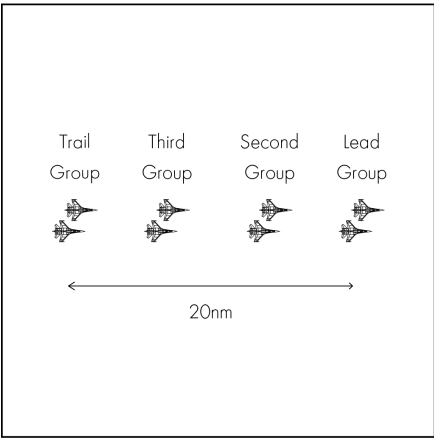
2 GROUP RANGE 10



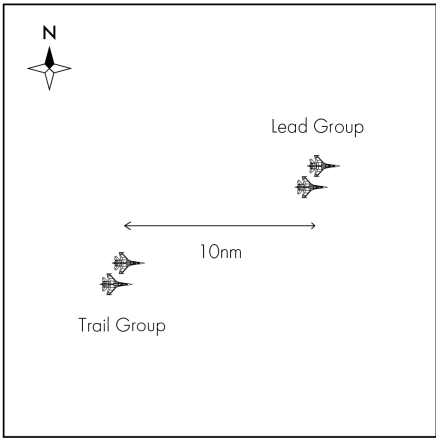
2 GROUP AZIMUTH 10  
ECHELON SOUTH WEST



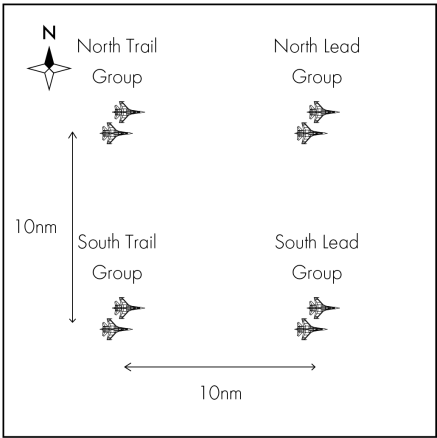
2 GROUP AZIMUTH 10



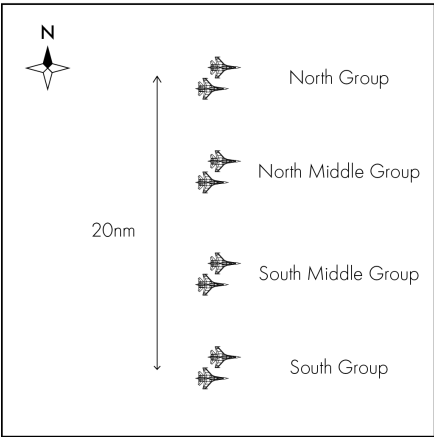
4 GROUP LADDER  
20 DEEP



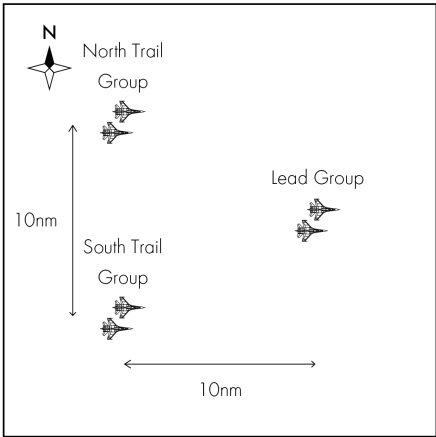
2 GROUP RANGE 10  
ECHELON SOUTH WEST



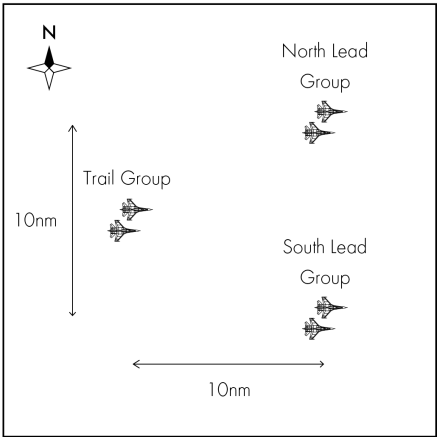
4 GROUP BOX  
10 WIDE 10 DEEP



4 GROUP WALL  
20 WIDE



3 GROUP VIC  
10 DEEP 10 WIDE

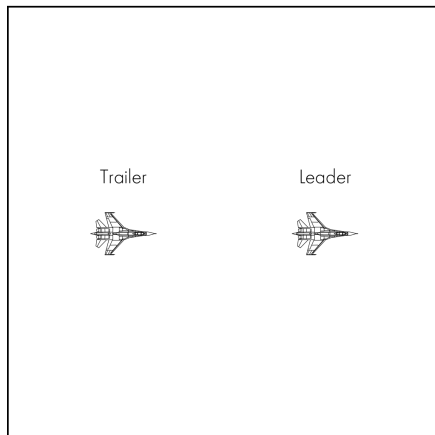


3 GROUP CHAMPAGNE  
10 WIDE 10 DEEP

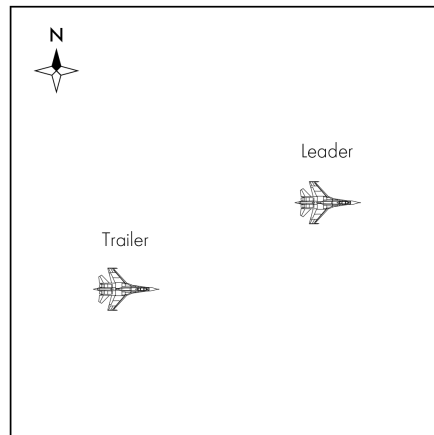
# SORTING

- Inner GROUP Formations.
  1. When describing an inner GROUP formation, controllers and fighters will use the terms described in the following figure, Inner Group Formations.
  2. Controllers and fighters should name the inner GROUP formation when this call will enhance fighter targeting or SA approaching the merge.
  3. Inner GROUP formations should be used inside expected radar resolution ranges.

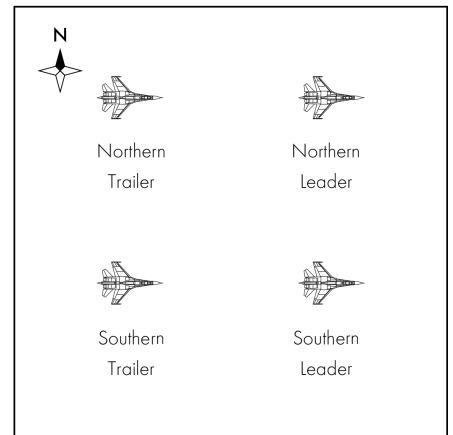
## INNER GROUP PICTURE



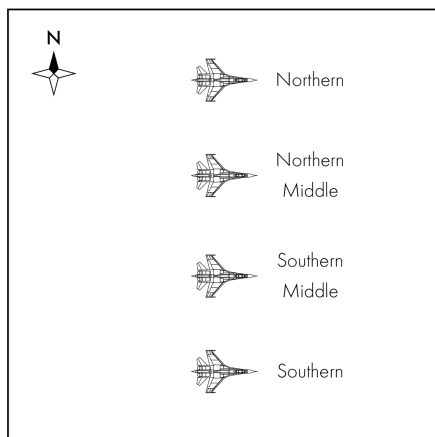
LEAD TRAIL



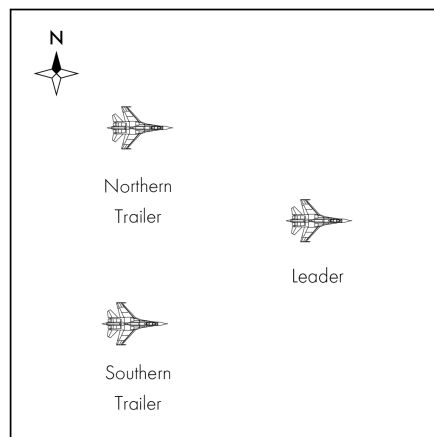
SWEPT



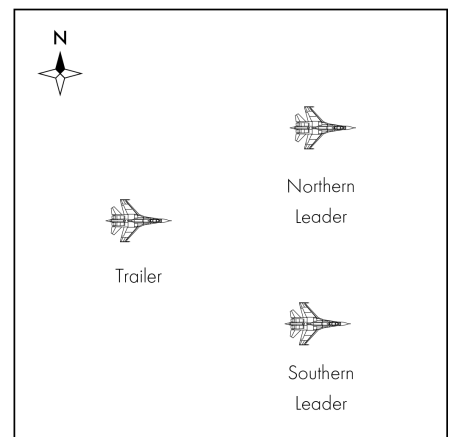
CONTAINER



LINE ABREAST



WEDGE



STINGER

- **Targeting** is the process of assigning fighters responsibility for groups. These responsibilities may include supporting BVR missile shots, completing electronic identification (EID), measuring highly accurate target heading direction, or preparing to engage and VID. A fighter who is targeted to a group is said to "own" the group. If another fighter sorts into the group to assist the owner, that fighter is said to "share" the group. These two fighters are collectively called the owner and the sharer.
- **Sorting** is the process of determining the "inner-group picture", establishing track files on the appropriate contacts, and (if applicable) allocating the owner and sharer radars within the group. There may be a difference between a radar sort and a visual sort. In some VID cases, once the flight lead is tally-ho he may elect to change to a visual sort based on the imminent merge geometry.

## Against AIM120C-7

AIM120C-7	nm
TR	48
MSR	45
MTR	36
DOR	36
MAR	31
MRR	30
DR	27
STERN WEZ	23

at 35000ft  
(±4nm/10000ft)

### INITIAL TIMELINE

TR + 7 ~ TR ( 55 ~ 48 )

**Option:** SKATE,SHORT SKATE,BANZAI

**2ship ops:** WINGMAN-TARGET / EL-SORT

**4ship ops:** WINGMAN TARGET / FL, EL-SORT

**Defend:** NLT MAR

### RECOMMIT TIMELINE

TR - 1 ~ DOR + 4 ( 47 ~ 40 )

**Option:** SHORT SKATE,BANZAI

**2ship ops:** WINGMAN-TARGET / EL-SORT

**4ship ops:** WINGMAN-TARGET / FL, EL-SORT

**Defend:** NLT MAR

### RECOMMIT TIMELINE 2

DOR + 3 ~ MRR ( 39 ~ 30 )

**Option:** SHORT SKATE,BANZAI

**2ship ops:** EL-TARGET / WINGMAN-SORT or Look for unaware hostile while FL is looking at Radar screen

**4ship ops:** FL,EL-TARGET / WINGMAN-SORT or Look for unaware hostile while FL is looking at Radar screen

**Defend:** NLT DR

\* Numbers are available only when you enabled New Missile Flight Model option from Korean Training Theater Settings.exe

## Against PL-12

PL-12	nm
TR	45
MSR	37
MTR	32
DOR	32
MAR	27
MRR	26
DR	23
STERN WEZ	19

at 35000ft  
(±4nm/10000ft)

### INITIAL TIMELINE

TR + 5 ~ TR ( 50 ~ 45 )

**Option:** SKATE,SHORT SKATE,BANZAI

**2ship ops:** WINGMAN-TARGET / EL-SORT

**4ship ops:** WINGMAN TARGET / FL,EL-SORT

**Defend:** NLT MAR

### RECOMMIT TIMELINE

TR - 1 ~ DOR + 4 ( 44 ~ 37 )

**Option:** SHORT SKATE,BANZAI

**2ship ops:** WINGMAN-TARGET / EL-SORT

**4ship ops:** WINGMAN-TARGET / FL,EL-SORT

**Defend:** NLT MAR

### RECOMMIT TIMELINE 2

DOR + 3 ~ MRR ( 36 ~ 26 )

**Option:** SHORT SKATE,BANZAI

**2ship ops:** EL-TARGET / WINGMAN-SORT or Look for unaware hostile while FL is looking at Radar screen

**4ship ops:** FL,EL-TARGET / WINGMAN-SORT or Look for unaware hostile while FL is looking at Radar screen

**Defend:** NLT DR

\* Numbers are available only when you enabled New Missile Flight Model option from Korean Training Theater Settings.exe

## Against AA-12

AA-12	nm
MTR	40
TR	32
MSR	28
DOR	25
MAR	21
MRR	22
DR	19
STERN WEZ	15

at 35000ft  
(±4nm/10000ft)

### INITIAL TIMELINE

TR + 5 ~ TR ( 37 ~ 32 )

**Option:** SKATE,SHORT SKATE,BANZAI

**2ship ops:** WINGMAN TARGET / EL-SORT

**4ship ops:** WINGMAN TARGET / FL,EL-SORT

**Defend:** NLT MAR **CRANK:** MORE THAN 12AA= CRANK AT TAC RANGE, LESS THAN 12AA= CRANK WHEN GROUP IS TURNING HOT

### RECOMMIT TIMELINE

TR - 1 ~ DOR + 3 ( 31 ~ 28 )

**Option:** SHORT SKATE,BANZAI

**2ship ops:** WINGMAN TARGET / EL SORT

**4ship ops:** WINGMAN TARGET / FL,EL SORT

**Defend:** NLT MAR **CRANK:** MORE THAN 12AA= CRANK, LESS THAN 12AA= NO CRANK

※check group aspect before recommit by using PICTURE or BOGEY DOPE

### RECOMMIT TIMELINE 2

DOR + 2 ( 27 ~ 19 )

**Option:** SHORT SKATE,BANZAI

**2ship ops:** WINGMAN TARGET / EL SORT

**4ship ops:** WINGMAN TARGET / FL,EL SORT

**Defend:** NLT DR **CRANK:** MORE THAN 12AA= CRANK, LESS THAN 12AA= NO CRANK

※check group aspect before recommit by using PICTURE or BOGEY DOPE

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