

CLOSE AIR SUPPORT

LESSON ONE
=X51=



Objectives

- Learn:
 - What CAS is
 - Realistic CAS procedures and control
- Be able to:
 - Understand and use keyhole IPs
 - Give and receive effective talk on instructions
 - Perform at least a simplified version of the procedures in a mission environment
- Not covered:
 - 9 line briefings (can be covered at a later time)

What is CAS?

- Not just a generic term for A2G operations
- Attacking enemy ground units close to friendlies
- Performed under control of JTAC or FAC(A)
- High level of pilot-controller coordination required minimize risk of friendly fire and CAS aircraft from ground threats
- Detailed communication and employment procedures facilitate this coordination
- Types of CAS:
 - **CAS** - pre-planned. Flights are briefed beforehand on who they'll be supporting and how
 - **GCAS** - ground alert CAS. Flights are on the ground in an alert state, ready to respond to CAS requests
 - **XCAS** - airborne alert CAS. Flights are already in the air, waiting for CAS requests.

CAS in DCS and X51

- Some procedures irrelevant in a DCS MP environment, but...
- Training will cover more than is practically required
- The more crucial aspects will be highlighted, which will:
 - Improve our coordination with other flights or controllers
 - Minimize confusion
 - Increase our CAS effectiveness
- It is important to remember:
 - There is a **LOT** of information here, even if it is simplified. In practice we will rarely follow this flow to the letter.
 - The idea is to learn a somewhat realistic CAS flow and understand the purpose of the steps, which should lead to the smooth running of CAS, whether or not it's 'by the book.'
 - Most of this stuff needs to be remembered by the JTAC. The CAS flight is just following instructions.

Simplified CAS flow

Flight receives
CAS tasking
from controller
AWACS

Will give:

- General area
- JTAC callsign
- JTAC frequency
- Clearance to contact JTAC

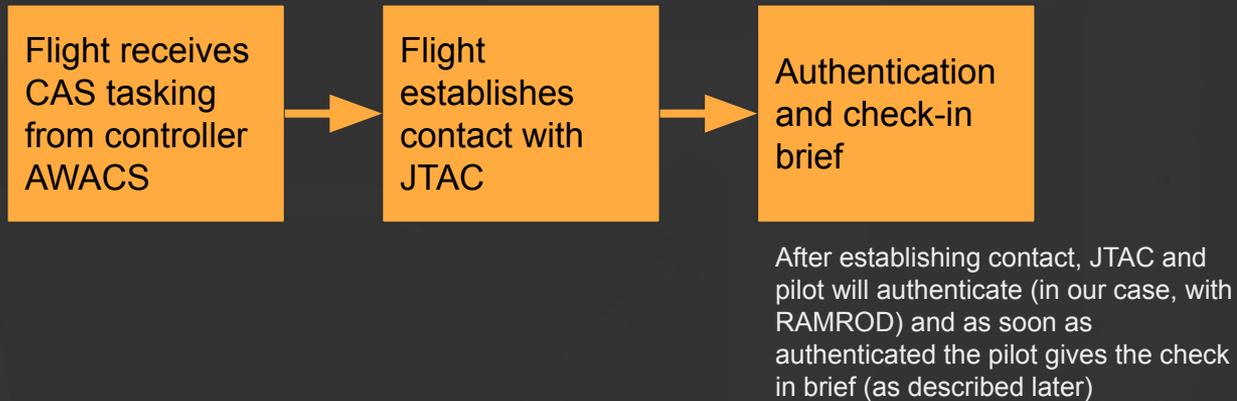
Simplified CAS flow

Flight receives
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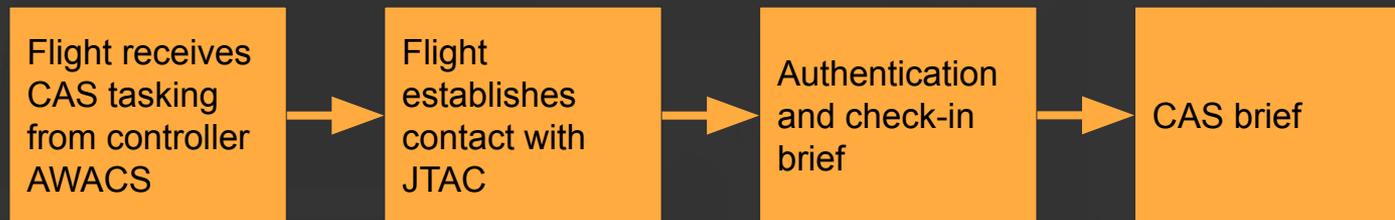


Flight
establishes
contact with
JTAC

Simplified CAS flow

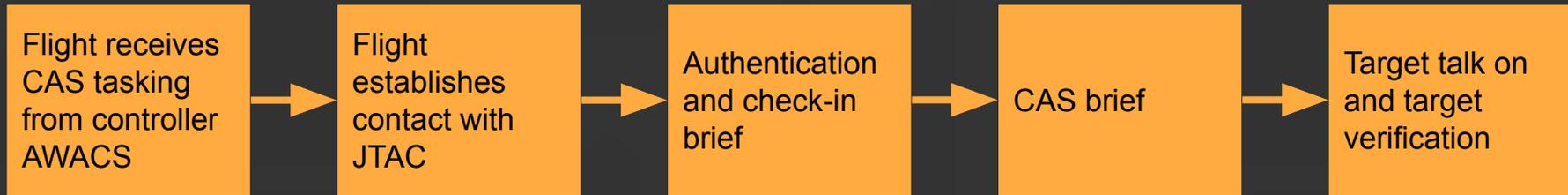


Simplified CAS flow



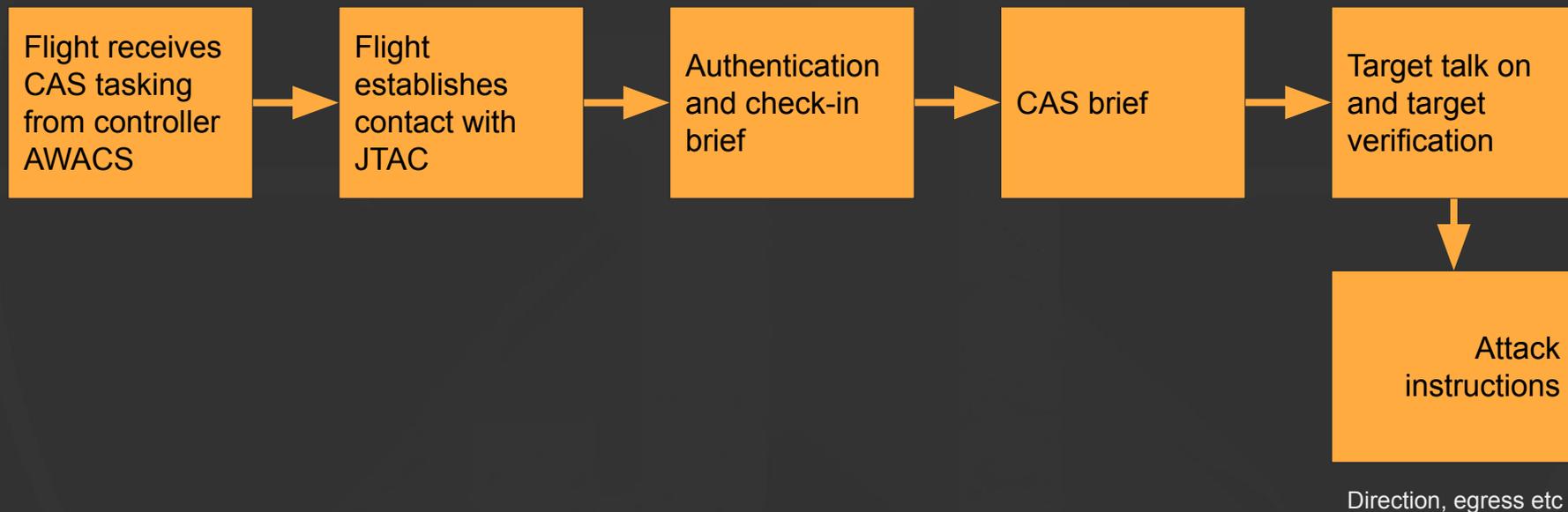
When ready to copy, JTAC gives the pilot the 9-line brief. Not all lines are relevant for DCS and only a few lines need to be read back.
For now we will do 5-lines.

Simplified CAS flow

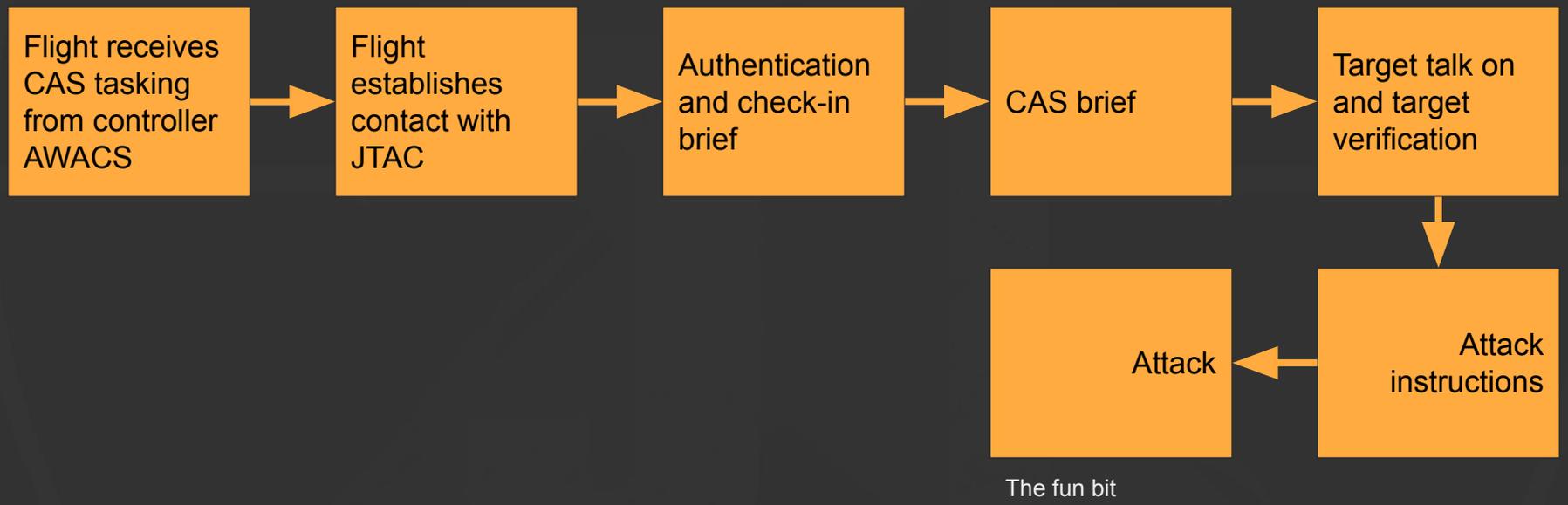


The talk on depends on the situation and type of CAS (bomb on visually ID'd target or bomb on coordinate? Weather conditions, terrain etc)

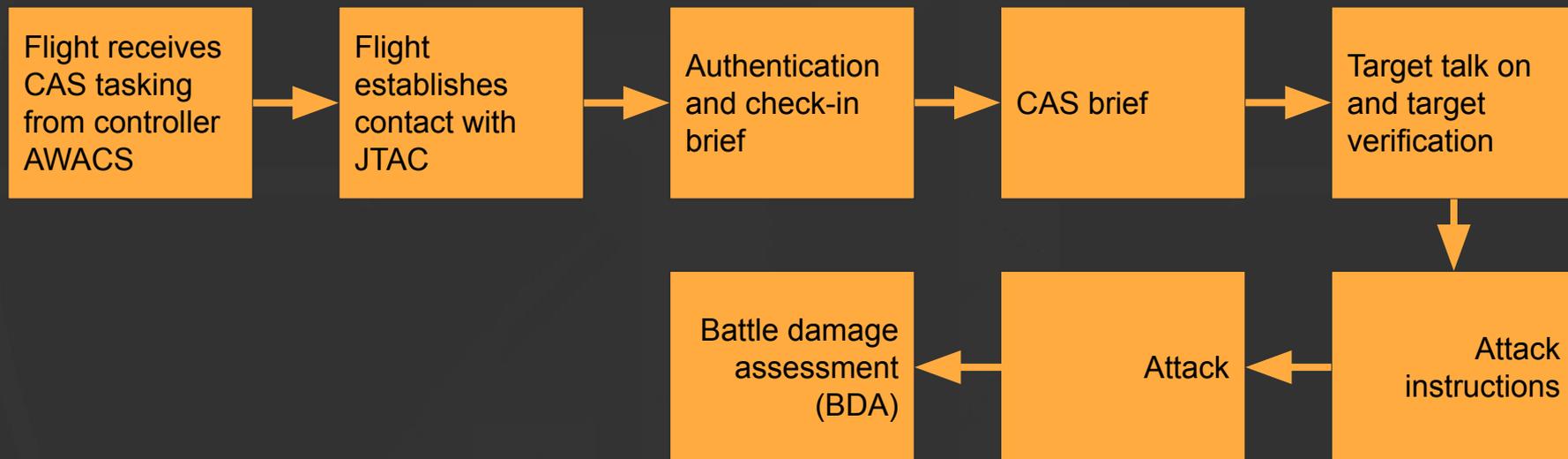
Simplified CAS flow



Simplified CAS flow

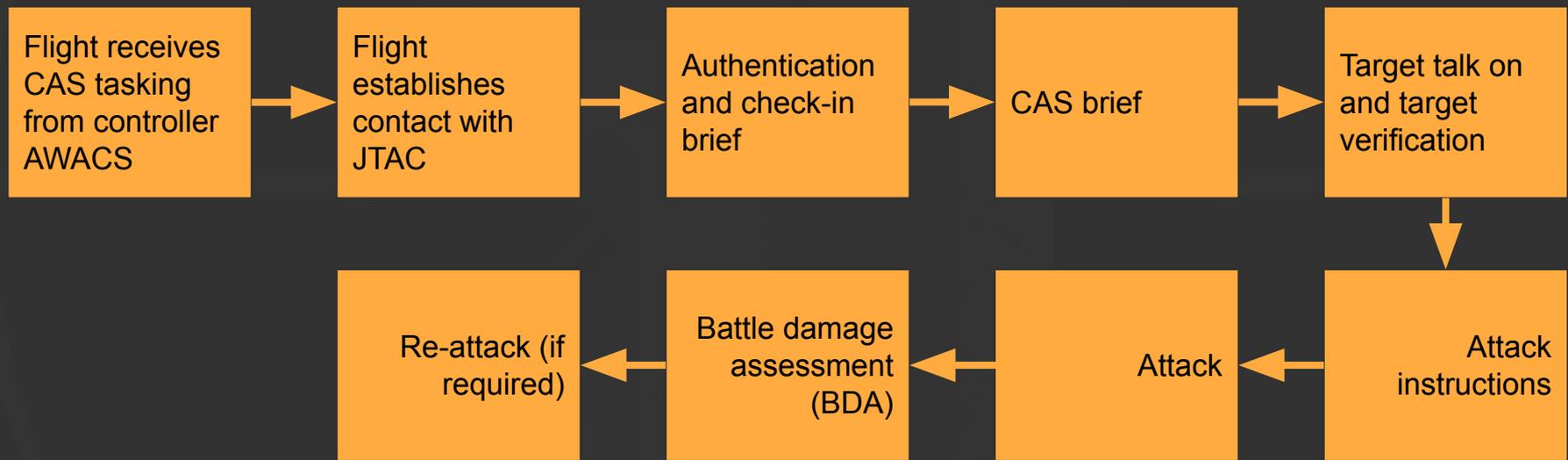


Simplified CAS flow



Good effect on target?
Required another attack?
If so...

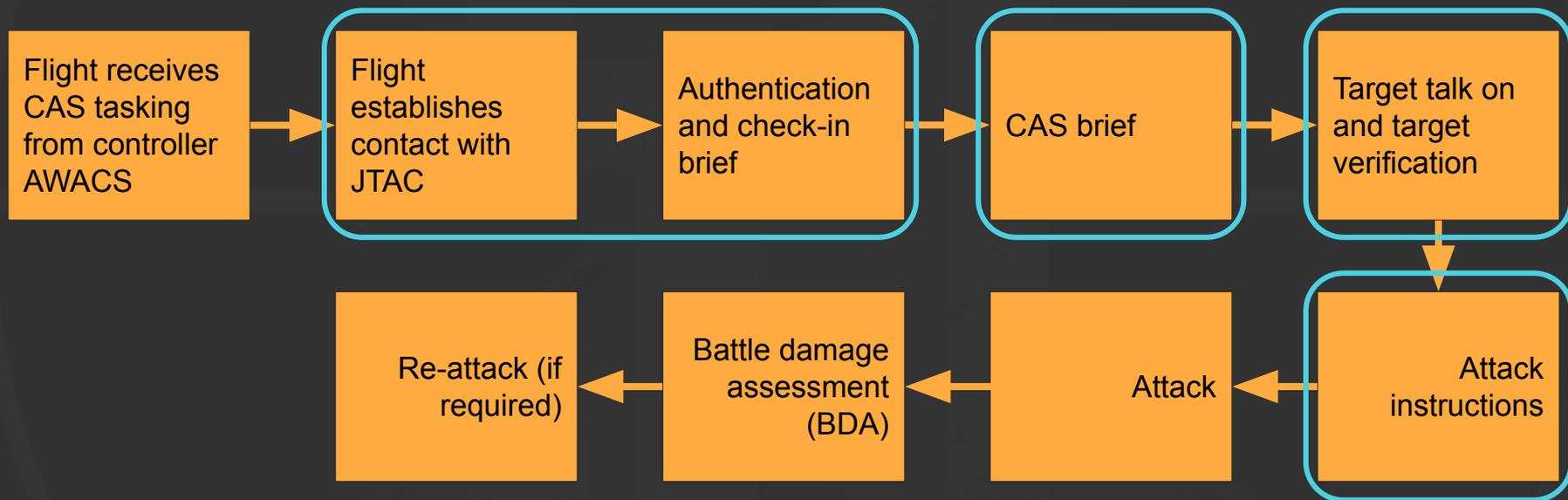
Simplified CAS flow

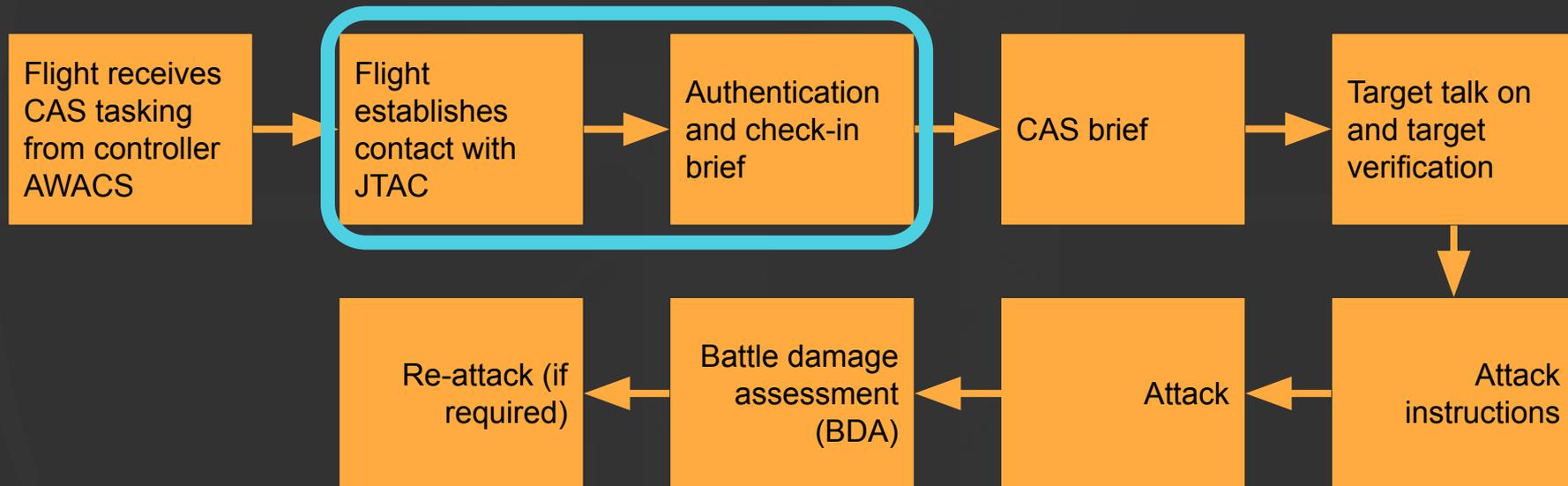


...then re-attack.

Simplified CAS flow

Will cover these four parts in more detail





RAMROD Authentication

- This is used to make sure you are talking to a friendly JTAC, or that your JTAC is not under enemy control
- The RAMROD is a single word with no repeating letters
- Authentication is established by asking each other for the letter between two other letters. This is done as the pilot contacts the JTAC, and then proceeds immediately with the check in brief.
 - If authentication of JTAC is failed three times, pilot immediately ceases contact with JTAC and reports to AWACS.
- *Example (RAMROD: BACKGROUND):*
 - **Venom:** Whiplash, Venom 1-1 checking in.
 - **Whiplash:** Venom 1-1, Whiplash, authenticate charlie golf
 - **Venom:** I authenticate kilo. Authenticate oscar november
 - **Whiplash:** I authenticate uniform.

Check-in Brief

- The check in brief informs the JTAC of your position and capabilities
 - *Position information is required as the JTAC is responsible for the safety of the CAS aircraft, and this includes managing aircraft deconfliction and exposure to threats such as SAMs*
- The check-in brief includes the following information:
 - Mission Number*
 - Quantity and type of aircraft
 - Current position and altitude
 - Ordinance
 - How long you can stay on station
 - Relevant sensors
 - Abort code

**Although not necessary information, the mission number is automatically generated and assigned in our ATO and MDC pages for missions*

Check-in Brief

- Extending the previous example, check in with the JTAC could look something like:
 - **Venom:** *Whiplash, venom 1-1 checking in.*
 - **Whiplash:** *Venom 1-1, Whiplash, authenticate charlie golf*
 - **Venom:** *I authenticate kilo. Authenticate oscar november*
 - **Whiplash:** *I authenticate uniform.*
 - **Venom:** *Whiplash, venom 1-1, mission number 1215, single F-16, established at IP Maven at 16000ft. Two times JDAM, full gun, targeting pod. Playtime 10 minutes. Abort code, in the clear.*
- **Notes:**
 - *With pre-planned CAS, all this information could be pre-briefed. In which case the check-in brief can simply be 'Mission number 1215 on station, as fragged'*
 - *Abort code 'in the clear' just means the attack can be aborted with 'ABORT, ABORT, ABORT'*
 - *Abort code can be pre-briefed in the spins, or RAMROD could be used ('abort code bravo charlie' means the abort code is alpha, for ramrod 'BACKGROUND').*
 - *Position and altitude info depends on how the AO is briefed.*
 - *It could be a pre-briefed IP that venom already has a WP for.*
 - *Whiplash could create an ad-hoc IP for venom that they would direct them to after authentication.*
 - *A keyhole can be set up on the fly by the JTAC*

Decreasing amount of
pre-planning in ATO

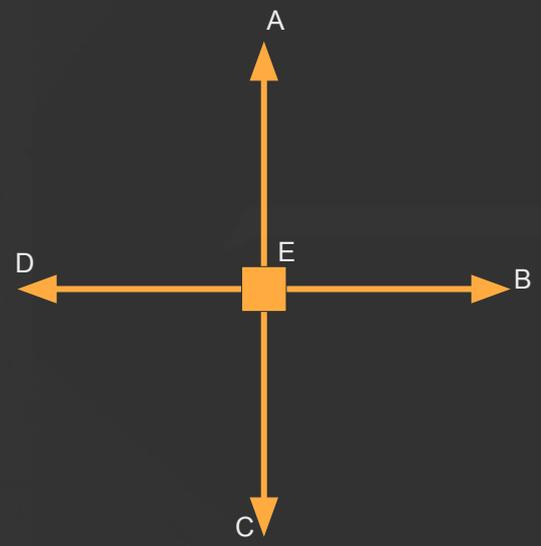


Keyhole IP

- A keyhole IP is a cross centered on the target (Echo) with cardinal directions denoted as Alpha (north), Bravo (east) Charlie (south) and Delta (west)
- The JTAC first relays the coordinates of Echo for the CAS flight. This automatically defines the rest.
- Echo can also be pre-briefed.
- The JTAC directs the aircraft to particular positions around the keyhole using these denotations and 'no closer than' distances.
- No matter what point the JTAC directs the flight to, the 'no closer than' distance is always relative to the center (Echo)

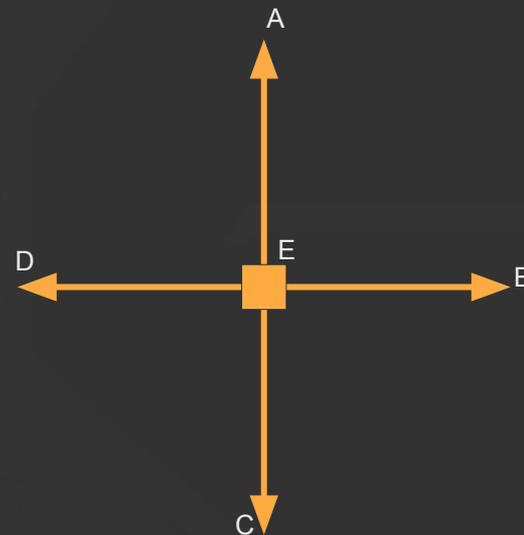
Keyhole IP

JTAC directive	Meaning



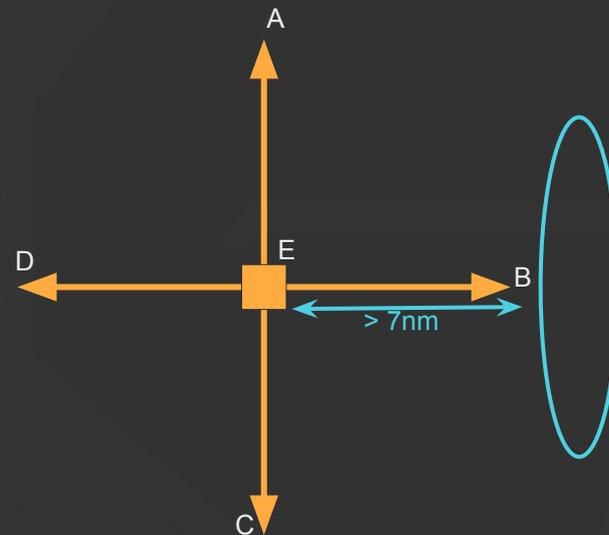
Keyhole IP

JTAC directive	Meaning
"Venom 1-1, proceed to Bravo 7 at flight level 180, hold north to south, 5 mile legs, report established"	



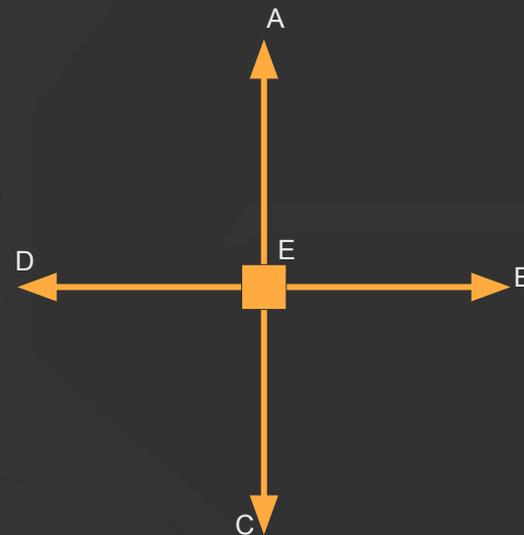
Keyhole IP

JTAC directive	Meaning
"Venom 1-1, proceed to Bravo 7 at flight level 180, hold north to south, 5 mile legs, report established"	Venom 1-1 should establish a north-south racetrack 5 miles long at FL180, to the east of the IP, no closer than 7 miles from it



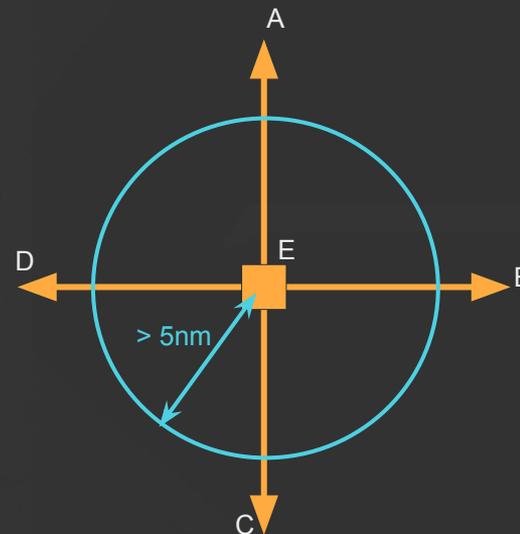
Keyhole IP

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“Venom 1-1, proceed to Bravo 7 at flight level 180, hold north to south, 5 mile legs, report established”	Venom 1-1 should establish a north-south racetrack 5 miles long at FL180, to the east of the IP, no closer than 7 miles from it
“Venom 1-1, proceed to Echo 5 at flight level 180, report established”	



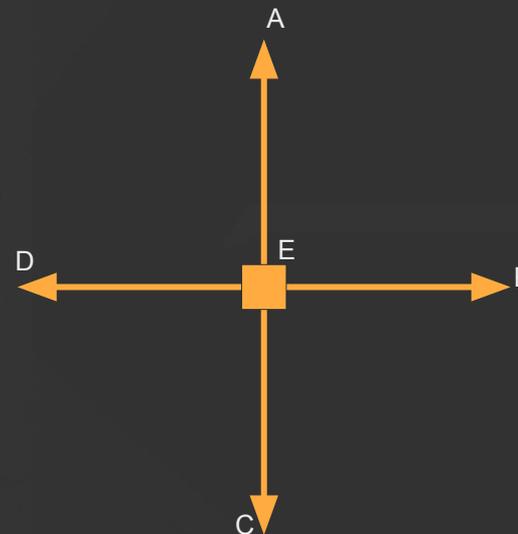
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"Venom 1-1, proceed to Echo 5 at flight level 180, report established"	Venom 1-1 should establish a wheel, orbiting echo at a distance no closer than 5 miles, at FL180



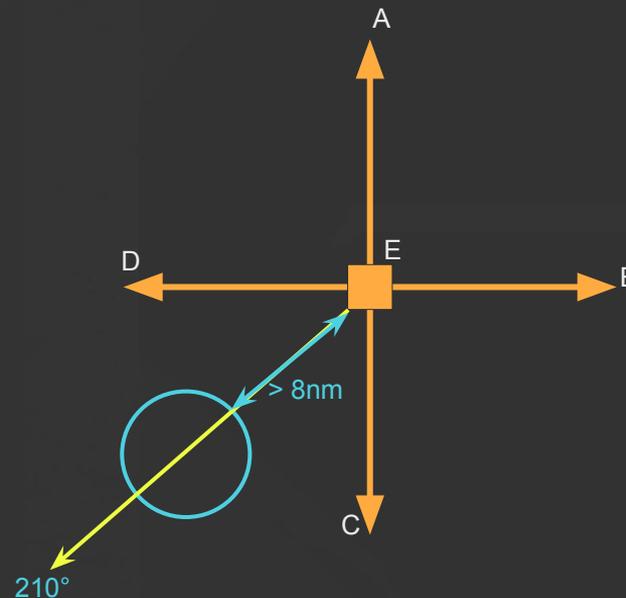
Keyhole IP

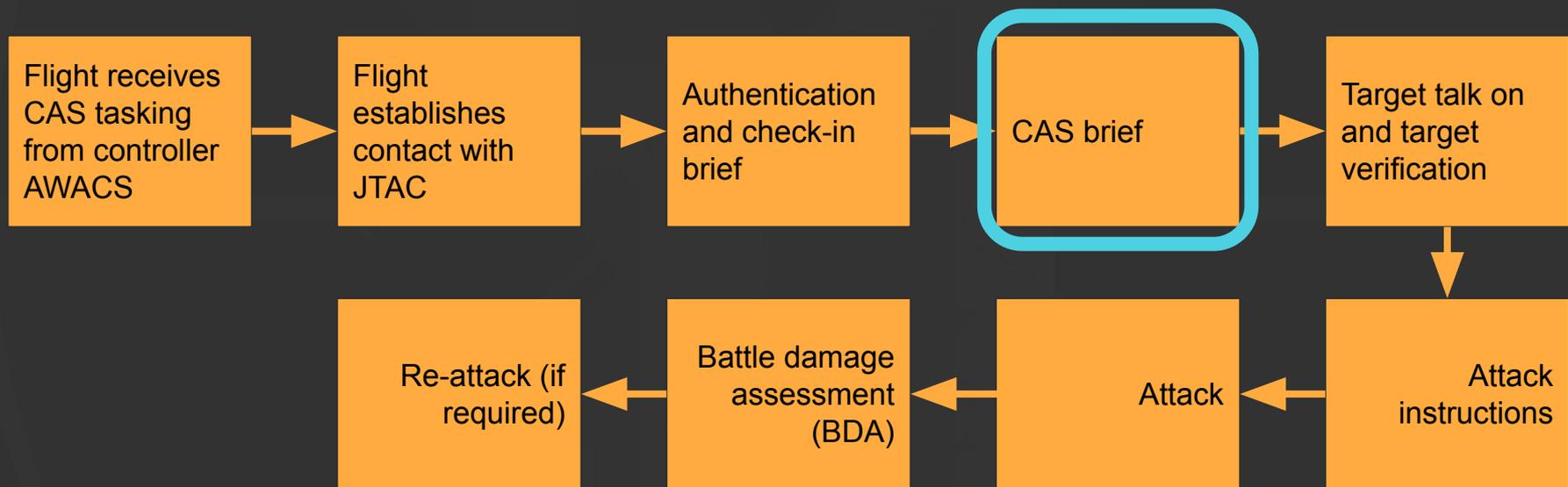
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"Venom 1-1, proceed to Bravo 7 at flight level 180, hold north to south, 5 mile legs, report established"	Venom 1-1 should establish a north-south racetrack 5 miles long at FL180, to the east of the IP, no closer than 7 miles from it
"Venom 1-1, proceed to Echo 5 at flight level 180, report established"	Venom 1-1 should establish a wheel, orbiting echo at a distance no closer than 5 miles, at FL180
"Venom 1, proceed to Echo 210 at 8, flight level 150, hold wheel, report established"	



Keyhole IP

JTAC directive	Meaning
“Venom 1-1, proceed to Bravo 7 at flight level 180, hold north to south, 5 mile legs, report established”	Venom 1-1 should establish a north-south racetrack 5 miles long at FL180, to the east of the IP, no closer than 7 miles from it
“Venom 1-1, proceed to Echo 5 at flight level 180, report established”	Venom 1-1 should establish a wheel, orbiting echo at a distance no closer than 5 miles, at FL180
“Venom 1, proceed to Echo 210 at 8, flight level 150, hold wheel, report established	Venom 1-1 should establish themselves on the radial 210 from echo, no closer than 8 miles and orbit.





5-line CAS Brief

- In this exercise we will use the simple “5-line” brief.
 - Often used for rotary wing CAS ops
 - Works well enough for fixed wing in DCS
- What is an x-line brief?
 - A series of information (lines) given in a set order by the JTAC that contains all the info the CAS flight needs for the attack.
- For a 5-line it is:
 - 1. Callsign
 - 2. Target position
 - 3. Target description
 - 4. Ordinance
 - 5. Ingress/egress direction
- Additional information can be added if required, e.g.
 - “Friendlies 200m south of target”
 - “JTAC lasing on 1668”

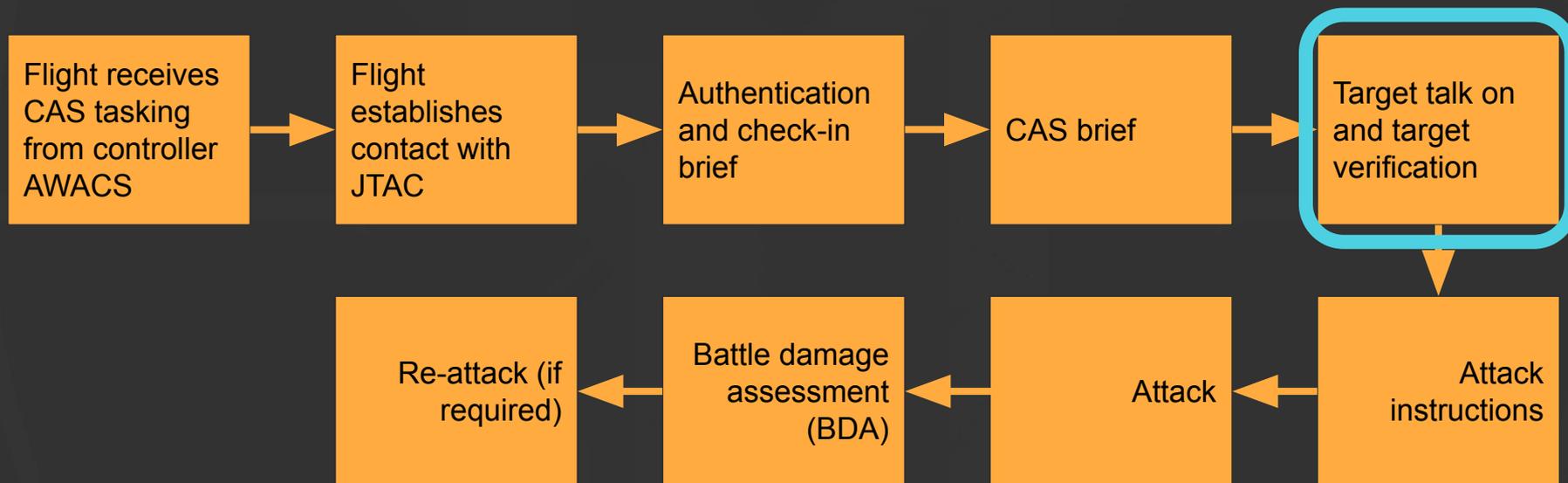
Whiplash: *Venom 1-1, Whiplash. Target is south of river, one BMP, request 1x GBU, ingress from the east.*

Full pre-CAS Brief Communication Example

- **Solex:** *Venom 1-1, Solex. Tasking, close air support for JTAC Whiplash. Fly direct to Maven. Contact Whiplash on 265.0*
- **Venom:** *Solex, Venom 1-, fly direct to AO Maven. Contacting Whiplash on 265.0*
- ...
- **Venom:** *Whiplash, Venom 1-1 checking in.*
- **Whiplash:** *Venom 1-1, Whiplash, authenticate charlie golf*
- **Venom:** *I authenticate kilo. Authenticate oscar november*
- **Whiplash:** *I authenticate uniform.*
- **Venom:** *Whiplash, Venom 1-1, mission number 1215, single F-16, established at IP Maven at FL 200. Two times JDAM, full gun, targeting pod. Playtime 10 minutes. Abort code, in the clear.*
- **Whiplash:** *Venom 1-1, report when ready to copy Echo.*
- ...
- **Venom:** *Ready to copy Echo, Venom 1-1*
- **Whiplash:** *North 36°11.672', East 36°19.742' at 385ft.*
- **Venom:** *North 36°11.672', East 36°19.742' at 385ft.*
- **Whiplash:** *Venom 1-1 good readback, proceed to Charlie 7 at FL 180, hold east-west five mile legs. Report when established*
- **Venom:** *Proceeding to Charlie 7 at FL 180, holding east-west will report established.*
- ...
- **Venom:** *Whiplash, Venom 1-1 established Charlie 7 at FL 180*

Full pre-CAS Brief Communication Example

- **Whiplash:** *Venom 1-1, this will be a type 1 control. Advise when ready to copy*
- **Venom:** *Ready to copy*
- **Whiplash:** *Venom 1-1, Whiplash, target is south of river, one BMP, request 1x GBU, ingress from the east.*
- **Venom:** *Whiplash, Venom 1-1, target is 1x BMP south of the river, 1x GBU requested, ingress east.*
- **Whiplash:** *Venom 1-1, Whiplash, readback correct. Advise ready for talk-on*
- **Venom:** *Ready for talk-on, Venom 1-1*
- *- talk on -*
- **Whiplash:** *Venom 1-1, Whiplash, you are cleared hot.*
- **Venom:** *Whiplash, venom 1-1 cleared hot. 10 seconds.*
- *- attack -*
- **Whiplash:** *Venom 1-1, Whiplash, good effect on target, no re-attack required. Engagement complete.*

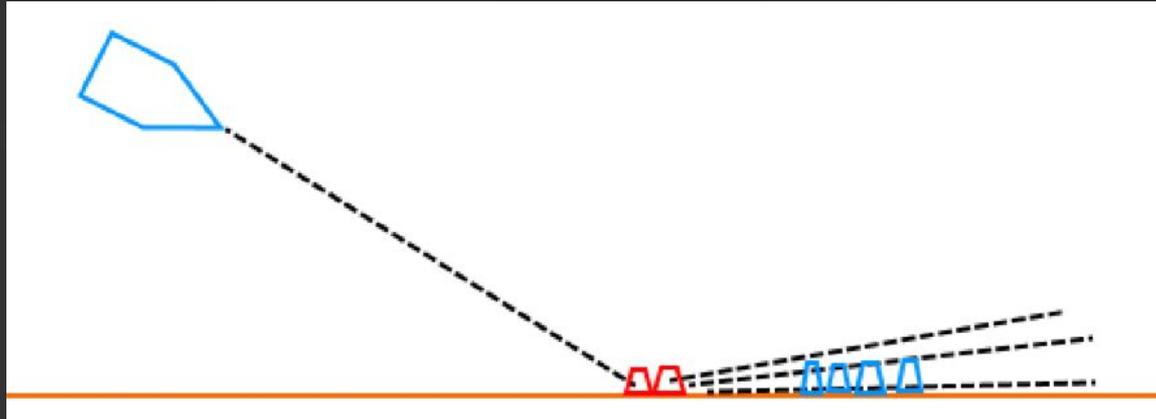


Talk-on

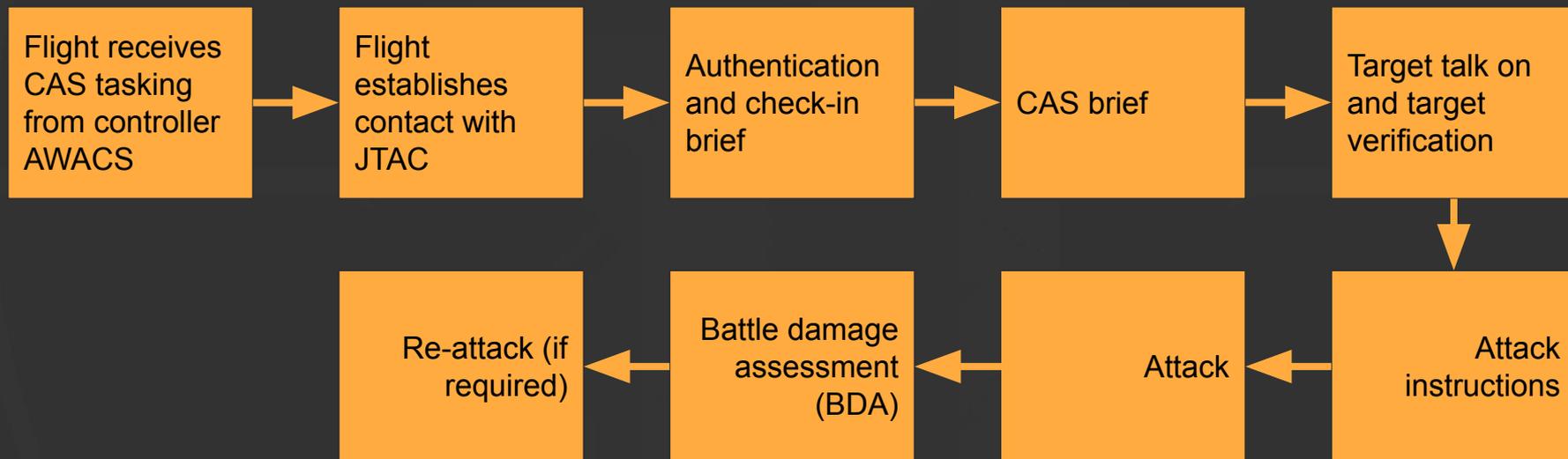
- Before talk on, JTAC will specify type of control and whether it is a gun run, bomb on target or bomb on coordinate.
- For bomb on target or gun run the JTAC will first give you a reference point to look at, and then tell you to report what you see
 - This gives the JTAC a good idea of your SA and what you're actually looking at.
- From here, they can walk you onto the target using reference points and units of measure. Flight calls "**contact**" when they see a reference point, "**visual**" when they spot friendlies and "**tally**" when they spot the target. "**Captured**" is generally used when point is spotted/tracked with TGP.
 - **Whiplash:** *Venom 1-1, on the southern tip of the town to the east of the small lake, what do you see?*
 - **Venom:** *I see an triangular shaped industrial area with a water tower on its southern tip.*
 - **Whiplash:** *Distance between water tower and small lake is one unit of measure. Half a unit of measure south of water tower is a red building.*
 - **Venom:** *Contact red building.*
 - **Whiplash:** *On the west wall of the red building there is a BMP.*
 - **Venom:** *Contact BMP.*
 - **Whiplash:** *That BMP is your target.*
 - **Venom:** *Tally target.*

Attack heading

- Why is it important?



Recap



Tasking

- Two ship flights if possible
- Take off Al Minhah, RW 09
- Check in with Solex DB505
- Patrol between WP2 and WP3
- Await tasking



Notes

- Don't worry about getting it right or following it perfectly
 - It's a system to make CAS effective, and safe for friendlies, not to follow like a drill.
 - If that is accomplished, no one cares if the comms were correct or not.

QUESTIONS?