



Leadplane Training Course



Leadplane Training Course

Aircraft Sequencing



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Lessons

The Theory Behind Sequencing

The Leadplane's Situational Awareness

The Mechanics Behind Sequencing

Building Efficiency



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The Theory Behind Sequencing

1. All pilots are responsible for their own visual separation.
2. The leadplane is a facilitator. The leadplane provides situational awareness to improve efficiency.
3. All participants want to do a good job to the best of their ability.
4. The leadplane is responsible for the tone and the environment that is created.



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The Theory Behind Sequencing

All pilots are responsible for their own visual separation.



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The Theory Behind Sequencing

All pilots are responsible for their own visual separation.

Every pilot is responsible for themselves.



Leadplane Training Course

The Theory Behind Sequencing

All pilots are responsible for their own visual separation.

Every pilot is responsible for themselves.

The leadplane is responsible for the aircraft under their control.



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The Theory Behind Sequencing

The Leadplane is a Facilitator



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The Theory Behind Sequencing

The Leadplane is a Facilitator

We are not FAA aircraft controllers.



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The Theory Behind Sequencing

The Leadplane is a Facilitator

We are not FAA aircraft controllers.

We facilitate by providing situational awareness.



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The Theory Behind Sequencing

We provide situational awareness to all resources so they can maintain visual separation from each other.



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The Theory Behind Sequencing

We provide situational awareness to all resources so they can maintain visual separation from each other.

Pilots follow our instructions out of good faith and the belief we have something to offer. We create a trust environment.



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The Theory Behind Sequencing

All participants want to do a good job to the best of their ability.



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The Theory Behind Sequencing

All participants want to do a good job to the best of their ability.

All pilots want to make a safe, efficient and effective drop.



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The Theory Behind Sequencing

All participants want to do a good job to the best of their ability.

All pilots want to make a safe, efficient and effective drop.

No pilot wants to perform poorly.



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The Theory Behind Sequencing

We are responsible for the tone and the environment we create.



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The Theory Behind Sequencing

We are responsible for the tone and the environment we create.

Be Legitimate

Provide valuable targets that are in line with sound tactics.



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The Theory Behind Sequencing

We are responsible for the tone and the environment we create.

Be Courteous

It is hard to follow direction from someone who is not being professional.



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The Theory Behind Sequencing

We are responsible for the tone and the environment we create.

Instill Trust

Keep the best interest of the other aircraft as a priority.



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The Theory Behind Sequencing

We are responsible for the tone and the environment we create.

Be Honest

Admit to being wrong and own your mistakes and be humble.



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The Theory Behind Sequencing

We are responsible for the tone and the environment we create.

Be Respectful

If someone has poor performance, be honest and objective. Provide solutions not just critique. In flight is no place to have an adversarial discussion.



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The Theory Behind Sequencing

We are responsible for the tone and the environment we create.

Instill Confidence

Be cool, calm and collected. Portraying stress and anxiety over the radio can be contagious and only leads to poor performance.



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The Theory Behind Sequencing

Understand your role as a facilitator.



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The Theory Behind Sequencing

Understand your role as a facilitator.

Know what is expected of you from other resources and what you can expect from them.



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The Theory Behind Sequencing

Use verbal tools to create efficiency by instilling trust and confidence.



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The Theory Behind Sequencing

Use verbal tools to create efficiency by instilling trust and confidence.

It's not just what you say but also how you say it.



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The Leadplane's Situational Awareness

The leadplane must maintain a high level of situational awareness.

Where is the aircraft in relation to the pattern?

Where is the aircraft in relation to the fire?

Where are the tankers and helicopters coming from and going to.



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The Leadplane's Situational Awareness

4 situational awareness tools

Listening

The HSI (Horizontal Situation Indicator)

The Altimeter

Kneeboard



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The Leadplane's Situational Awareness

Listening as a Tool

Take note of position calls made over the radio and form a mental map of where the resources are in relation to the fire.



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The Leadplane's Situational Awareness
Listening as a Tool



Manage the radios and volumes to maximize situational awareness



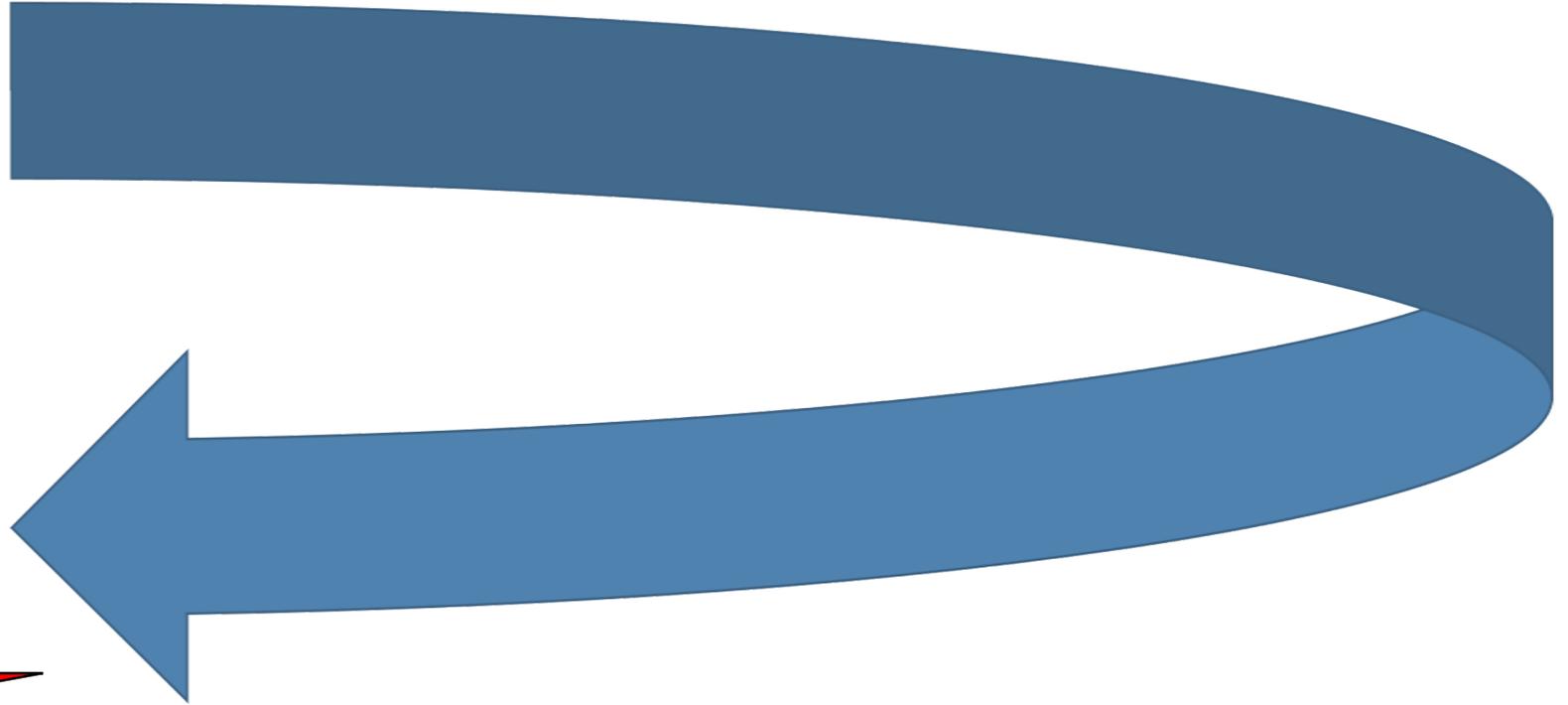
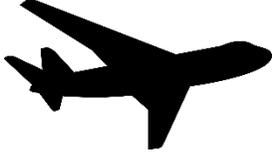
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Your Situational Awareness
The HSI as a Tool

The course needle or heading bug can be set to the heading while on final. This will aid in knowing where you are in the pattern compared to a crosswind, down wind, base and final.



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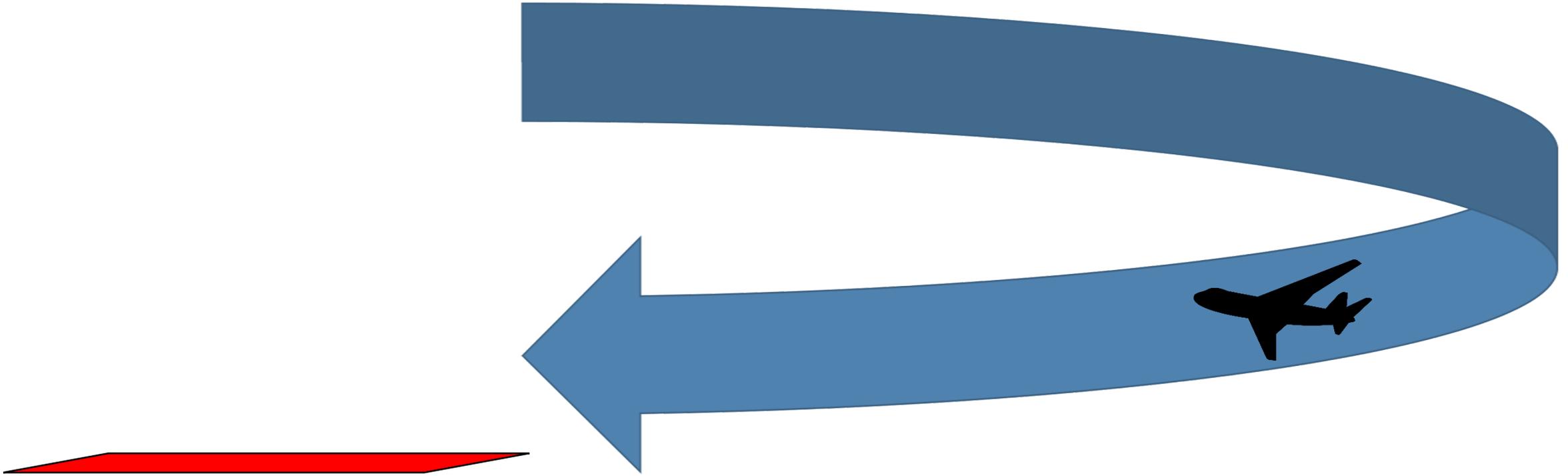


Downwind

Set the heading bug or course needle to the approximate final heading.



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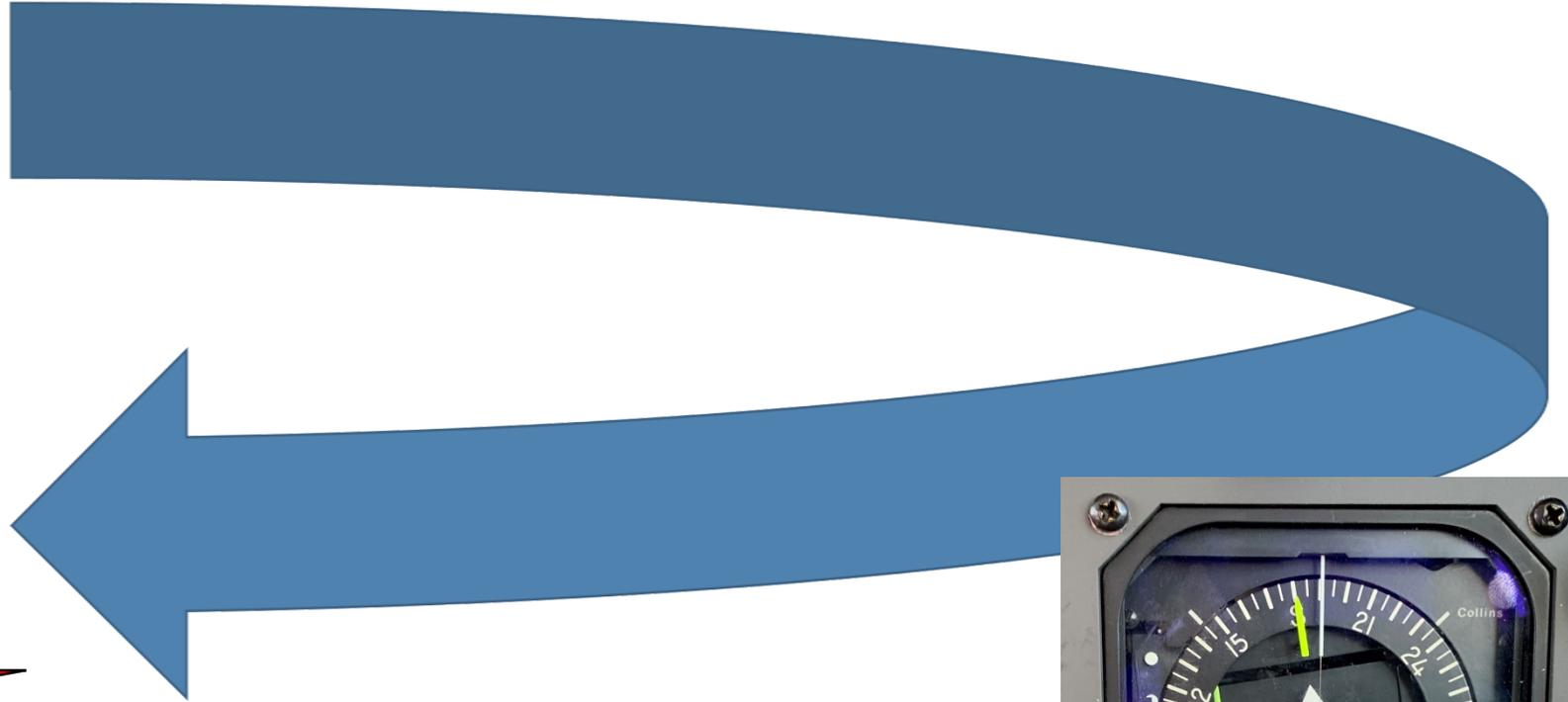
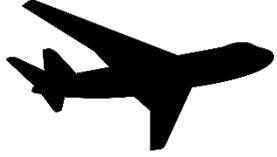


Final

Fine tune the heading bug or course needle to the final heading.

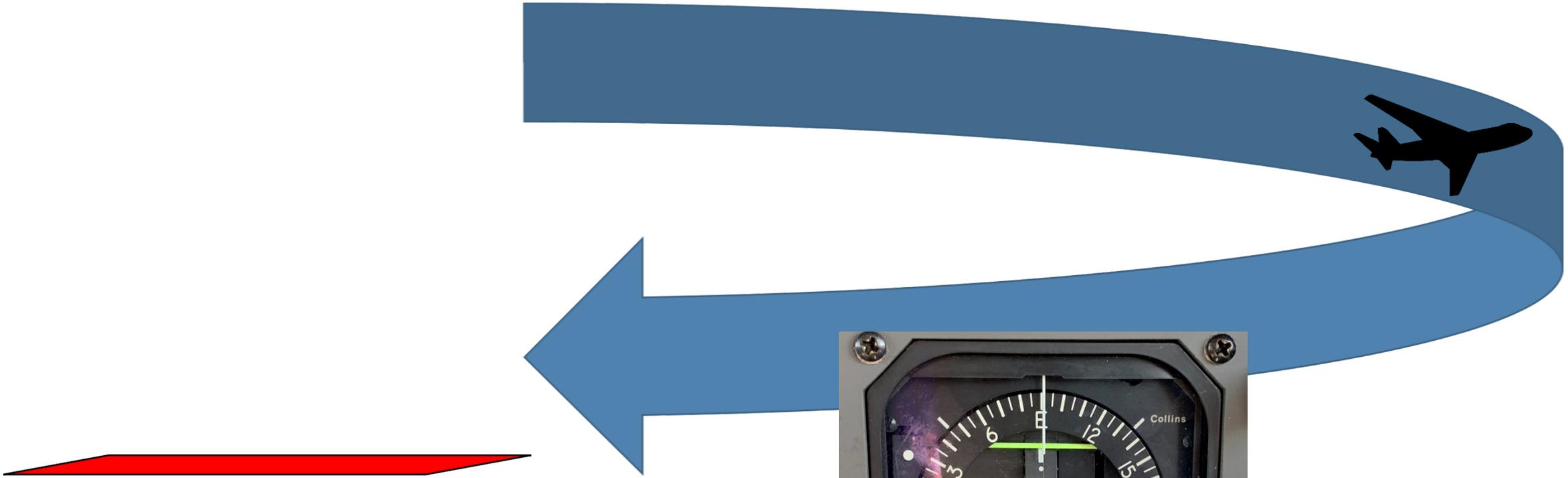


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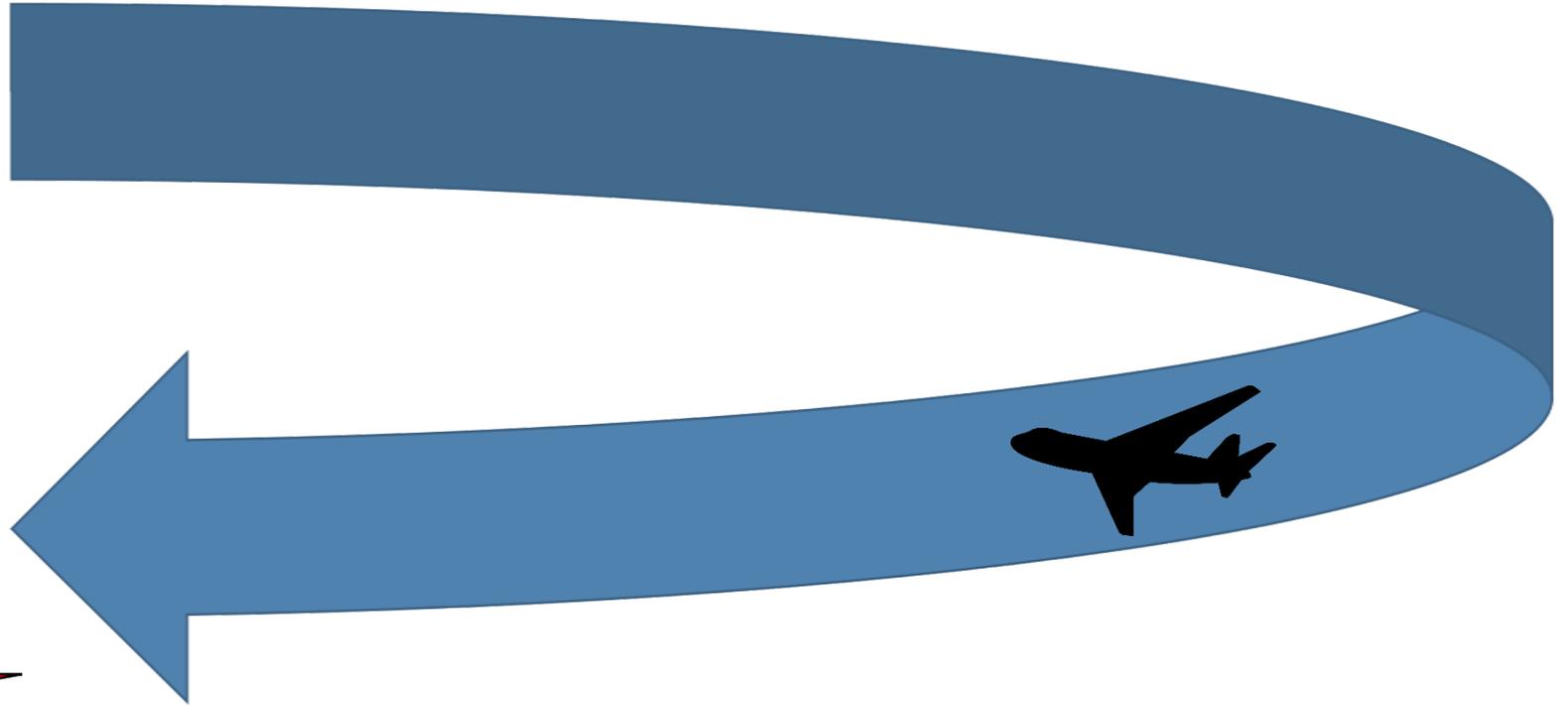


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The Leadplane's Situational Awareness

The Altimeter

Know the altitudes that determine the vertical dimensions of the fire traffic area.

Use these altitudes to manage the aircraft in the fire traffic area.



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The Leadplane's Situational Awareness

The Kneeboard

Use your kneeboard to keep track of resources and important information. Referring to a kneeboard will allow for better situational awareness.



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The Mechanics Behind Sequencing Make a Plan

Identify the Priority Aircraft

“The fire is burning in heavy timber, let’s prioritize the helicopters.”

The plan allows you to identify a priority resource when one resource or another is going to have to hold. Will an airtanker or a helicopter be held? The plan can be adjusted but at least there is a starting point.



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The Mechanics Behind Sequencing
Implement the Plan

Identify helicopter targets ASAP. These can always be changed later but this will get the “system” working.

The system will take 15 to 20 minutes for all participants to understand and perform their roll.



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The Mechanics Behind Sequencing Implement the Plan

It is very important to keep situational awareness high and ensure everyone sees the same picture during the implementation.

An efficient technique is to give the helicopter two targets. A primary and secondary. When the environment changes or timing changes, the helicopter can be “cleared to the secondary target.”



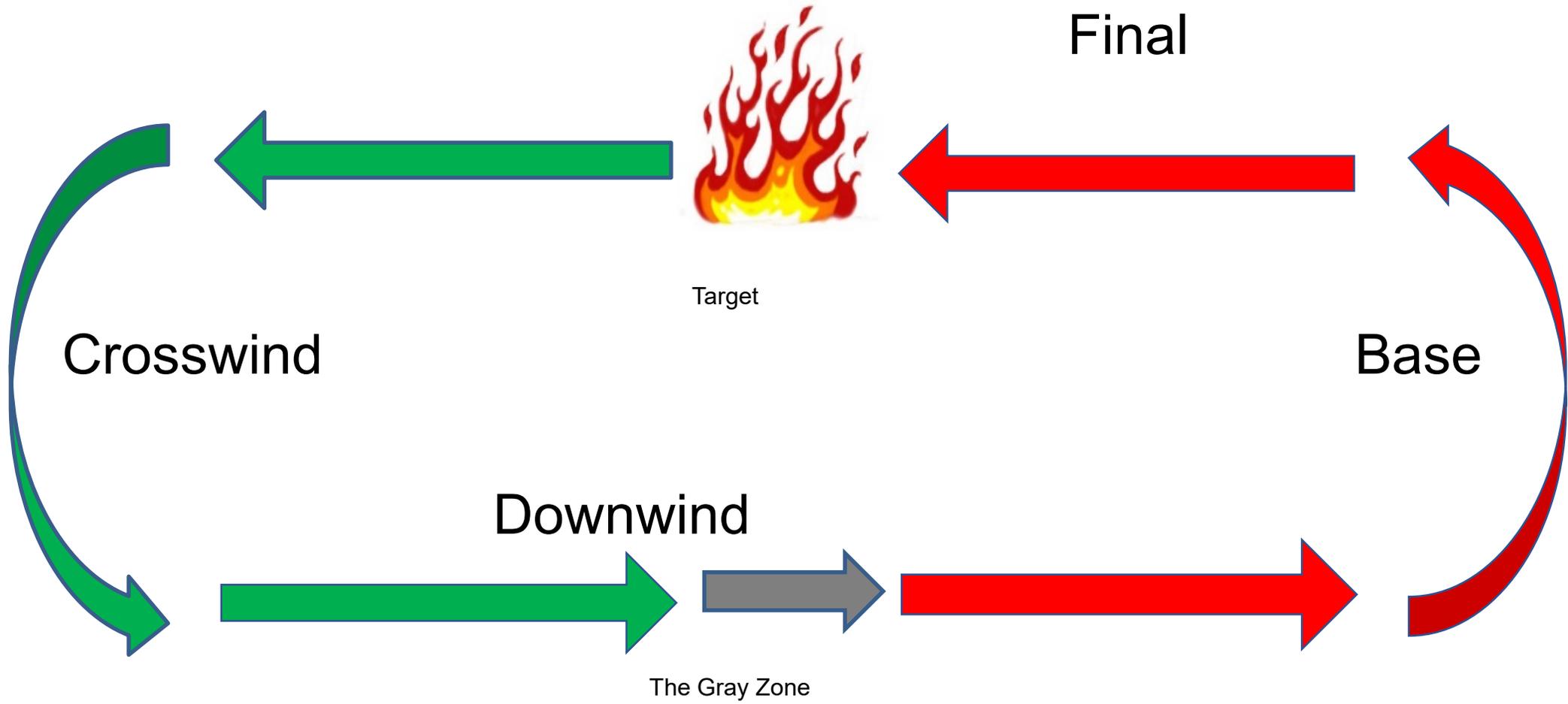
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The Mechanics Behind Sequencing Predictable Patterns

The leadplane pattern should be predictable. Every pattern should be, within reason, similar. This provides a known time frame.



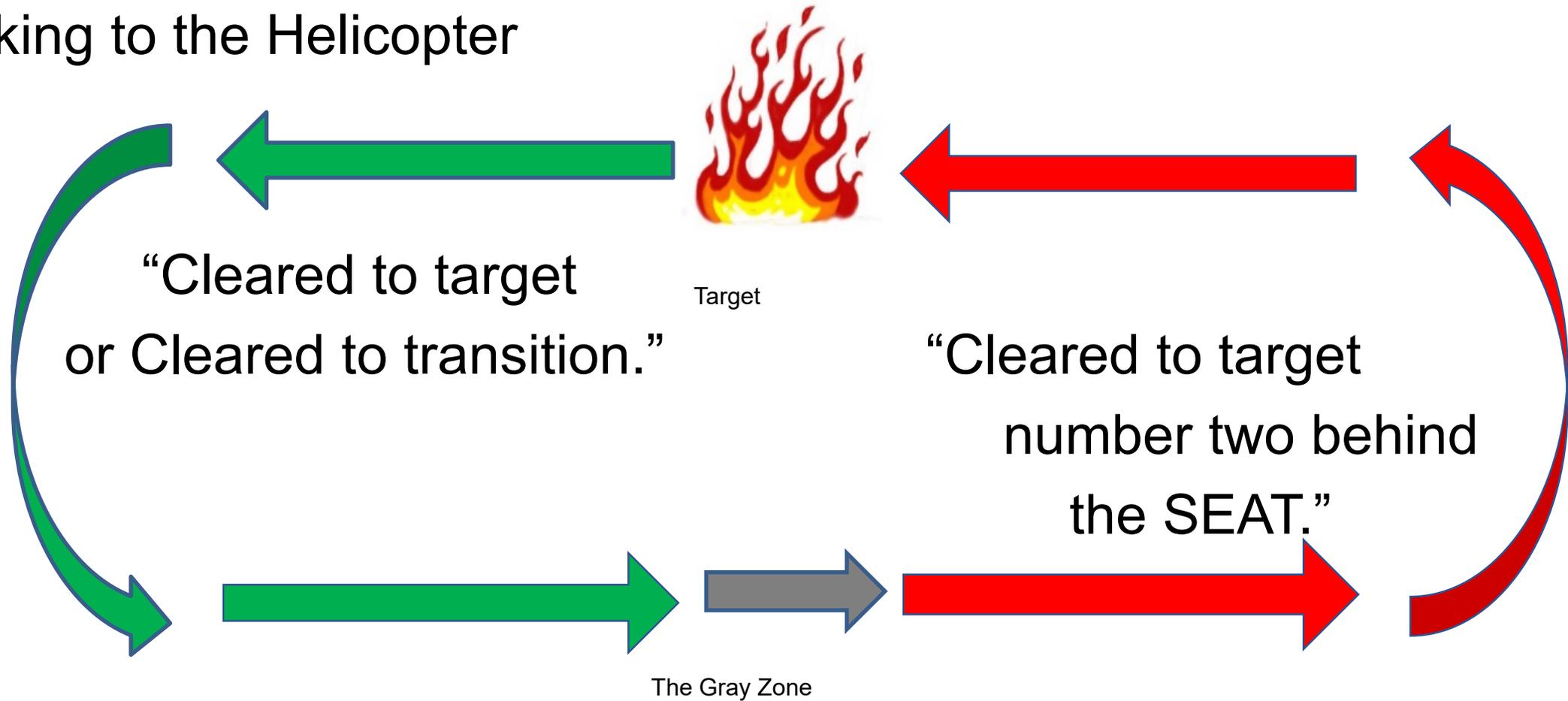
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Talking to the Helicopter





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The Mechanics Behind Sequencing
Phraseology as a System

The Set Up

“Call your dips, call your drops, call for clearance at the
“road” checkpoint.”

Name the checkpoints to help eliminate possible misunderstandings.



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The Mechanics Behind Sequencing
Phraseology as a System

Standardized Clearances

“Cleared to target.”

“Cleared to transition.”

“Cleared unrestricted.”



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The Mechanics Behind Sequencing
Phraseology as a System

Active Flight Following

“30B at the road check.” (helicopter)

“30B cleared to target.” (leadplane)



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The Mechanics Behind Sequencing
Phraseology as a System

Passive Flight Following

“30B off the drop.” (helicopter)

“30B off the dip.” (helicopter)



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The Mechanics Behind Sequencing Phraseology as a System

Give Exact Direction

“Cleared to target” vs “Cleared in.”

“Cleared to transition” vs “Cleared”

Once the target has been identified or the transition route has been identified it does not need to be reiterated.



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The Mechanics Behind Sequencing
Phraseology as a System

Responsibility for Separation lies with the Helicopter Pilot
(More efficient)

“Call your drops and call for clearance out of the dip.” (leadplane)

“30B off the dip.” (helicopter)

“30B cleared to target number two behind the SEAT.” (leadplane)



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The Mechanics Behind Sequencing
Phraseology as a System

Responsibility for Separation lies with the Leadplane Pilot
(Not as efficient)

“30B off the dip.” (helicopter)

“30B, tanker on scene, hold at the dip.” (leadplane)

“30B cleared to target.” (leadplane)



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The Mechanics Behind Sequencing
Phraseology as a System

Comfort Calls – Calls in the blind that build a visual picture in exactly that moment in time.



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The Mechanics Behind Sequencing
Phraseology as a System
Comfort Calls

Call the Legs of the Leadplane Pattern

“Bravo 4 downwind with a tanker.”

The helicopter knows where to look for the leadplane and tanker, and has an idea of timing in the pattern.



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The Mechanics Behind Sequencing
Phraseology as a System
Comfort Calls

Call Visual Contact

“Bravo 4 turning base, has 30B off the drop.”

The helicopter knows the lead is looking out for it and lets the tanker know the location of the helicopter.



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The Mechanics Behind Sequencing
Phraseology as a System
Comfort Calls

Call the Timing Strategy

“Bravo 4 with tanker, number two behind 30B, extending downwind.”

The helicopter is being given time to complete the drop and the tanker knows to plan for a longer downwind.



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The Mechanics Behind Sequencing Phraseology as a System

Use phraseology to be predictable.

The phraseology helps to create timing.

The phraseology helps to build a trust climate.



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The Mechanics Behind Sequencing Helicopter Check Points

Check points should be as close to the target as possible without causing an airspace conflict. This allows the shortest amount of time between the clearance “cleared to target” and the helicopter calling “off the drop.”



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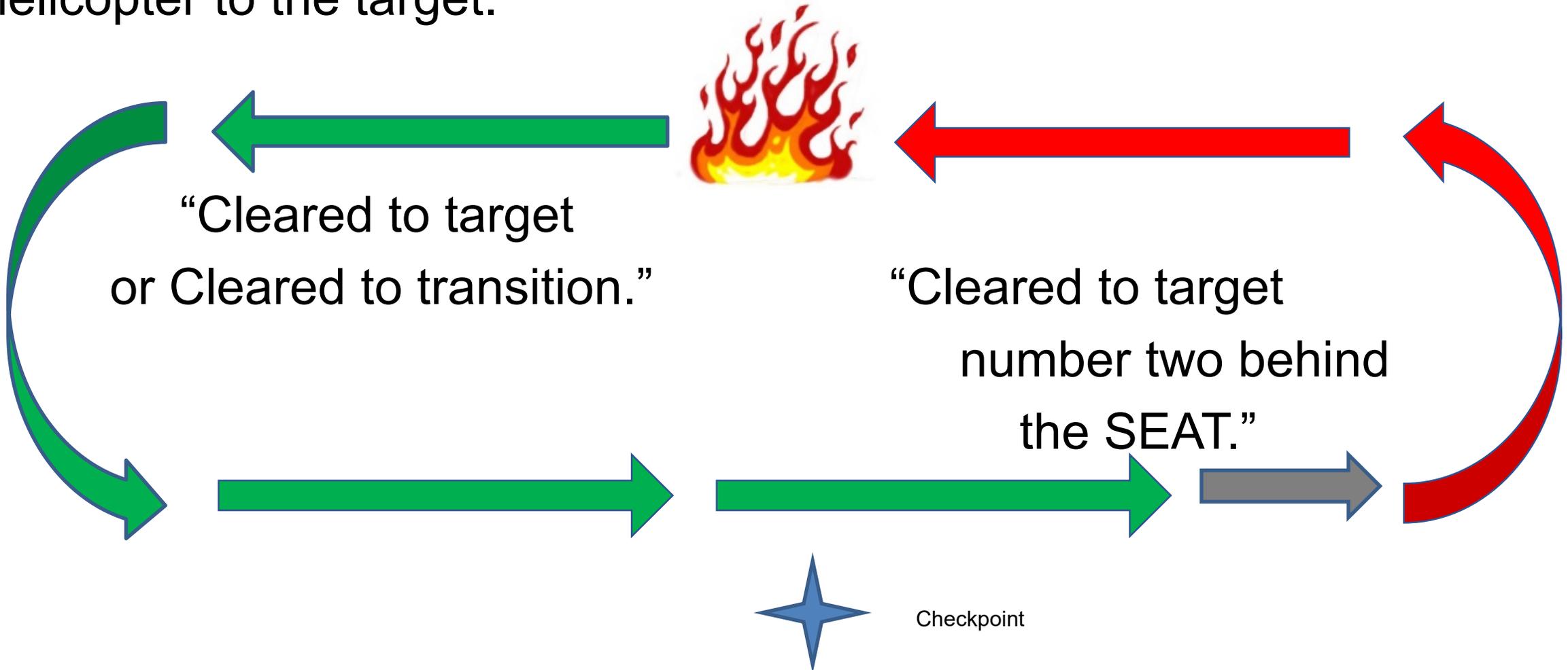
The Mechanics Behind Sequencing Helicopter Checkpoints

To allow for better helicopter pilot situational awareness, check point locations should allow the helicopter pilot to see the retardant drop. This allows for the shortest time frame from “cleared to target number two behind the SEAT” to helicopter calling “off the drop.”



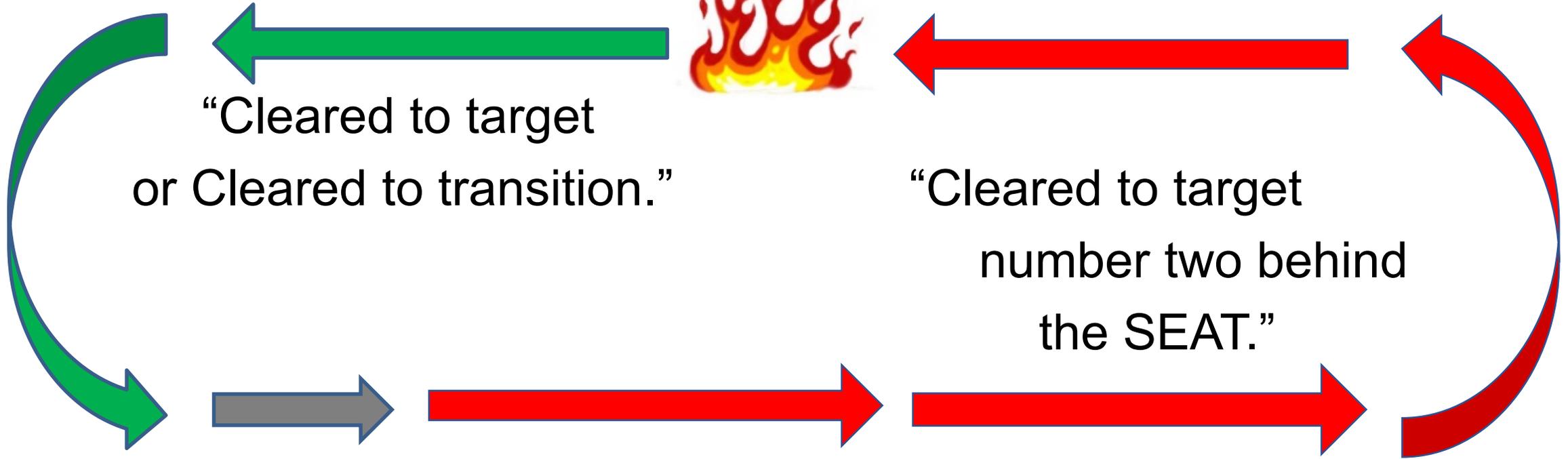
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A close check point gives more time in the pattern to clear the helicopter to the target.





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A check point that is further out reduces the time in the pattern to clear the helicopter to the target.

Checkpoint





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The Mechanics Behind Sequencing Helicopter Routing

Select very identifiable landmarks. The dip site, a helispot, an obvious road or intersection, or the red roofed house would be identifiable landmarks.



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The Mechanics Behind Sequencing Helicopter Routing

Select routes that are simple. The route should be easy to describe. It will be an added workload if the leadplane has to supervise each transition between the dip and drop.



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The Mechanics Behind Sequencing Helicopter Routing

When at all possible, flight follow passively. This lowers the leadplanes workload and engages the helicopter pilots in the sequencing.





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Building Efficiency

Objectively Determining Priority

Consider 4 airtankers and 6 helicopters assigned to a fire.

Holding 6 helicopters for 5 minutes equals 30 minutes of helicopter time for one airtanker drop. With 4 airtanker drops in one hour, two hours of helicopter time can be spent holding.



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Building Efficiency

Objectively Determining Priority

Consider 4 airtankers and 6 helicopters assigned to a fire.

Efficiently sequencing resources can maximize the time a resource is engaged in supporting fire suppression activities.



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Summary

Maintain situational awareness

Create a positive atmosphere

Develop a system based on individual experience

Use standardized clearances

Be predicable