



Lesson Plan

New Problems, New Thinking

10 May 2022



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How to Use this Lesson Plan

This lesson plan is divided into three key sections and an appendix containing supporting material.

The **About the Lesson** section outlines the lesson and identifies requirements for its effective use. Course Directors should use this section to (a) understand the purpose and context of the lesson, (b) learn about lesson pre-requisites, and (c) guide the selection of facilitators.

The **Before the Lesson** section provides details on the preparation required for this lesson, including participant prerequisites (if any), recommended facilitator pre-course readings, and guidance on how to prepare the classroom.

The **Presenting the Lesson** section contains the actual lesson plan. It provides the recommended outline, discussion, and slide prompts along with actual *questions* and *recommended language* for the facilitator to use in the classroom.

The **Appendix** includes any required in-class handouts or exercise material.

For more information on how lessons are structured, or how to use them in the course, see the **Course Director's Handbook** or **Facilitator's Resources**.

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About the Lesson

New Problems, New Thinking

Overview

Learning and leadership are directly related. This lesson is designed to motivate new flight commanders to discover (as they move into flight leadership) they may need to employ a new depth of thinking when faced with novel or unfamiliar experiences. As they engage with new problems they will now need to consider the second and third order of effects of their decisions. Participants are encouraged to ask themselves: “Am I ready to learn a new way of thinking as I move into flight leadership?”

Objectives

By the end of this lesson, participants will be able to:

1. Identify changes in problem complexity and scope at the flight level.
2. Consider ways to address complex problems as a flight-level leader.
3. Explain effective behaviors for problem solving and decision making in command.

Recommended Prerequisites

- Attend the lesson on *Preparing for Command*

Recommended Time

- 50 minutes

Recommended Facilitator Qualifications

This lesson is designed for a facilitator with the following minimum qualifications:

1. Subject matter knowledge
2. Command-level experience

Subject matter knowledge can be developed using the information presented in **Preparing the Facilitator** section of this document.

Before the Lesson

Preparing the Participant

- None. There is no pre-work for this lesson.

Preparing the Facilitator

All required materials and participant preparation, plus:

- Mindtools, [Six Thinking Hats](#) (2018).

Note: This is for motivational purposes only and is not intended to be the subject of this lesson but is intended to get facilitators “thinking differently.” Use within this program does not constitute endorsement of the vendor nor its products by Air University.

(Optional) Additional deep-dive preparation materials are available on *The Flight Commander’s Edge* website.

Preparing the Classroom

- Adequate classroom space for separate small group discussions.
- White boards or easels with butcher block paper (one per group).
- Computer and projector with internet connectivity

Preparing Required Materials

Prepare one copy of each handout below for each participant. Do not distribute handouts before the class.

- Air University Global College, *Skills and Behaviors for New Thinking Worksheet* (2022)
- Air University Global College, *New Problems, New Thinking Self-Assessment Worksheet* (2022)

Handouts are available in the Appendix.

Presenting the Lesson

NOTE: This lesson is designed for up to five (5) groups of participants. Groups should be no larger than five (5) participants to maximize participation during small group discussion.

Introduction (10 minutes)

This introduction to the lesson examines the complexity of problems and decisions encountered by flight-level leaders.

Slide 1: New Problems, New Thinking

Introduce the lesson.

Now that you are a flight-level leader, you will experience more leadership challenges.

As a leader, there is no way to predict the future, nor identify the types of problems or situations you will encounter.

Therefore, instead of focusing on the unknowns you will face, this lesson focuses on the “known.” The *complexity* of problems you face will change, and that complexity will have an effect on how you make decisions.

Slide 2: Objectives

This slide lists the lesson objectives.

After participants have reviewed the lesson objectives, continue.

Slide 3: Small Group Discussion

Divide the participants into small groups (4 or 5 members) and prompt the participants with the following experience.

In your small groups, take five (5) minutes to talk about the kinds of problems you may face as a flight commander. Also, consider the types of decisions you may be asked to make.

At the end of the discussion, be prepared to answer this question regarding problem solving and decision making:

What will change now that you are a flight-level leader?

Jot down your thoughts and be prepared to present your answers at the end of the discussion.

Monitor participants' discussions for activity.

After five (5) minutes, continue.

Initial Discussion (10 minutes)

The initial discussion builds on the small group discussion in the introduction and stresses the differences in the flight-level leader operational environment – how it is more volatile, uncertain, complex, and ambiguous. These key concepts inform the rest of the lesson.

Slide 4: Large Group Discussion

Reconvene the large group and ask one member from each group to share their group's answer. Ask:

What did you learn?

What will change now that you are a flight-level leader?

Record key points from answers on a whiteboard.

Anticipated Responses: Answers will vary but should focus on the complexity and scope of problems presented at the flight commander level (use of actual terms is not necessary).

- Resources – allocating both money and people to complete *complex* tasks
- Leading people – and all its associated personal and interpersonal dynamics issues which can be both *volatile* and *ambiguous* at the same time
- Working the bosses' problems – which are inherently more *complex*
- Social issues – and the *uncertainties* associated with what is permissible (or not)
- Working with first sergeant and other SNCOs – more *complex* relationships
- Every day brings a new challenge – *ambiguity* and *uncertainty* is the norm

After a brief discussion, continue.

Content Presentation (10 minutes)

This section of the presentation bridges between the discussion above on the nature of the flight commander environment to ways of thinking about complex problems. Two options provided for the facilitator that both achieve the same ends.

Note: These videos are provided by TED, a nonprofit education organization. Advertisements may show before, during, or at the end of the presentation. Inclusion of any ad within this program does not constitute endorsement of the vendor nor its products by Air University.

Slide 5: The VUCA Environment

Introduce the VUCA environment, and transition to ways leaders can look at complex problems in that environment.

In the previous discussion, you highlighted key points about the “environment” you are now facing as flight commanders. That environment has a name.

The VUCA environment – volatile, uncertain, complex, and ambiguous.

You will have to deal with the *ugly, wicked, complex* problems that come with being a leader.

Let’s take a few minutes and watch this...

Slide 6: Simplifying Complexity (Option A - Visible)

Option A is visible in the slide deck. Option B is hidden. *Do not use both videos in the course.*

Show the video “Simplifying Complexity” (5:42) from YouTube.

<https://www.youtube.com/watch?v=UB2iYzKeej8?end=221>

Facilitator Video Notes: Ecologist Eric Berlow doesn’t feel overwhelmed when faced with complex systems. He knows that more information can lead to a better, simpler solution. Illustrating the tips and tricks for breaking down big issues, he distills an overwhelming infographic on U.S. strategy in Afghanistan to a few elementary points.

When complete, continue.

Slide 7: Wicked Problems (Option B - Hidden)

Option A is visible in the slide deck. Option B is hidden. Do not use both videos in the course.

Show the video “Got a wicked problem? First, tell me how you make toast...” (9:05) from YouTube.

https://www.youtube.com/watch?v=vS_b7cJn2A

Facilitator Video Notes: Making toast doesn't sound very complicated -- until someone asks you to draw the process, step-by-step. Tom Wujec loves asking people and teams to draw how they make toast, because the process reveals unexpected truths about how we can solve our biggest, most complicated problems at work. Learn how to run this exercise yourself, and hear Wujec's surprising insights from watching thousands of people draw toast.

When complete, continue.

Application Activity (15 minutes)

The application part of the lesson is focused on identifying and understanding the key skills necessary to manage complex problems in the VUCA environment. An activity is used where participants explore and define the key behaviors associated with thinking critically, thinking creatively, solving problems, and making decisions. These definitions feed into the lesson self-assessment in the next section.

Slide 8: Raising Awareness

Continue the discussion.

The video we just watched shows that we can increase our probability of success in solving complex problems and making decisions if we *think differently*. In this case, embracing the complexity of problems, and looking for ways to simplify your focus around the elements of the problem that you are best able to impact.

What exactly does this mean?

It means we need to look at these kinds of problems and decisions using different skills and behaviors than we are used to. Skills like critical thinking and creative thinking. It also means that we need to look deeper at how we solve problems and make decisions.

Doing this in a survey course isn't easy. These four skills can take hundreds of hours of study. Fortunately, Squadron Officer School has demonstrated that leaders can remarkably improve in these areas by simply improving their awareness of the subjects.

That's what we are going to do next.

Distribute Air University Global College, *Skills and Behaviors for New Thinking Worksheet (2022)* to all participants. This worksheet contains a series of skills and behaviors, along with tips on how to improve in each area, which is designed to raise participant awareness. Each group will discuss one of the four in-depth, and be prepared to share with large group any discovery.

When complete, continue.

Slide 9: Small Group Discussion

Continue the discussion.

Take 10 minutes to review and discuss the handout in your small groups.

Each small group choose *one* of the four behaviors (critical thinking, creative thinking, problem solving, decision making).

The handout presents each of the four skills discussed, and identifies specific behaviors associated with each. To the right of each behavior are tips for personal improvement.

Look to focus on the following:

- What do these behaviors mean to you?
- What other tips, from your own experience, will drive improvement?

Be prepared to provide at least one improvement in the area your small group chose during our large group outbrief.

Monitor participants' discussions for activity.

After five (5) minutes, continue.

Slide 10: Large Group Discussion

Ask one member from each group to share their group's tip for improvement. Ask:

What did you learn?

What other ways can we improve?

Remind participants they can record additional tips on the worksheet.

Anticipated Responses: Vary.

Note: as the discussion on the four behaviors wraps up go back to Slide 4.

Slide 4: Large Group Discussion

Ask:

Now that we've covered these four behaviors consider this question:

What will change now that you are a flight-level leader?

How has your perspective shifted?

After a brief discussion, continue.

Lesson Wrap-Up (5 minutes)

The final lesson activity is a self-assessment of effective problem solving and decision making behaviors. This activity feeds the final lesson in the course – *The Road Ahead* – and will be used to support the development of the participants' personal development plan.

Distribute the **Air University Global College, *New Problems, New Thinking Self-Assessment Worksheet (2022)*** to all participants.

When complete, continue.

Slide 11: Self-Assessment

Initiate the self-assessment and wrap up the lesson.

In this lesson, we've looked at how, as a flight-level leader, the complexity of your world will change. We've also looked at the skills and behaviors needed to succeed.

Now, it's time to take a moment to reflect on those skills and behaviors.

The *New Problems, New Thinking Self-Assessment Worksheet* is designed to help you plan for your future. The instructions are self-explanatory. Take a moment to read them, then fill out the sheet. If you need more time, you can go into the break.

Keep this worksheet for reference. You will need it again for the last lesson of the course.

End. Break (10 minutes).

Appendix: Required Materials and Handouts

The materials required for this lesson include:

- Air University Global College, *Skills and Behaviors for New Thinking Worksheet* (2022)
- Air University Global College, *New Problems, New Thinking Self-Assessment Worksheet* (2022)

These handouts, on the following pages, are designed for printing directly from the lesson plan. Ensure you print enough copies for all class participants.

Skills and Behaviors for New Thinking Worksheet

Developed by the Air University Global College

We can increase our probability of success in solving complex problems and making decisions if we think differently about the skills associated with them. Skills like critical thinking and creative thinking. It also means that we need to look deeper at how we solve problems and make decisions.

You can improve markedly in these areas simply through awareness. Review the tables below for key behaviors associated with each skill, and tips for future improvement.

Critical Thinking

Critical thinking is at the heart of problem solving and decision making. You must be good at this skill to excel at the others.

Key Behaviors	How to Improve
Identify the situation or problem	When facing a new situation, you must <i>identify the problem</i> . Ask: <ul style="list-style-type: none">• What is the key (or core) issue?• Are there multiple issues, and which ones drive the problem? Identify the factors involved. Ask: <ul style="list-style-type: none">• Who is doing what?• What seems to be the reason for this happening?• What are the end results? How could they change? Define the goal associated with solving the problem. Ask: <ul style="list-style-type: none">• What do I want to achieve?
Compare arguments	When comparing arguments, research is key. <ul style="list-style-type: none">• Keep an eye for unsolicited claims.• Identify the source of information (and source bias, see below).• Ensure source is valid.
Identify bias	Ensure you set aside your own personal beliefs and identify bias on the part of others. When evaluating information, ask: <ul style="list-style-type: none">• Who does this benefit?• Does the source appear to have an agenda?• Is the source omitting information that doesn't support its claim?• Is the source attempting to sway perception of a fact?
Make connections and draw conclusions	The ability to infer and draw conclusions is critical. <ul style="list-style-type: none">• Gather as much information as possible first.• Evaluate information and make only educated guesses• Don't let emotions get in the way.
Determine relevance	Figure out what information is the most important <ul style="list-style-type: none">• Evaluate information objectively• List the data to help narrow your focus
Improve curiosity	Train yourself to foster curiosity productively <ul style="list-style-type: none">• Ask open-ended questions

Creative Thinking

Creative thinking and critical thinking go hand-in-hand, supporting both problem solving and decision making. Creativity is inspired when there is a problem to solve.

Key Behaviors	How to Improve
Accept prudent risk	Accept <i>risk</i> to create solutions for problems. <ul style="list-style-type: none"> • Take action – actively try to solve problems • Encourage out of the box thinking • Support idea exchange • Offer professional dissent
Build mutual trust	Build <i>trust</i> in team members to support creativity. <ul style="list-style-type: none"> • Generate ideas; encourage brainstorming • Support flight members' initiatives • Encourage innovation • Share information
Exercise disciplined initiative	Put ideas to a test before declaring <ul style="list-style-type: none"> • Adapt your thinking to the changing situation
Maintain operational initiative	Engage the right people at the right time – remember you have an operational mission at the same time you are encouraging creative thinking in yourself and others. <ul style="list-style-type: none"> • Gather ideas from all ranks • Encourage autonomy
Anticipate problems	Every day is an opportunity to problem solve <ul style="list-style-type: none"> • Try to think differently and reframe the issue • Keep an "idea journal" with you to quickly write thoughts, or mind map the problem
Model personal courage	Wait for others in the flight to make suggestions first, that way you can agree to their ideas, even if same as yours. <ul style="list-style-type: none"> • Display patience • Suspend advocacy of your own idea to push someone else's concept • Allow others in flight to have some influence
Prevent complacency	Continually look for new creative skills to develop in yourself and your flight <ul style="list-style-type: none"> • Foster diverse thinking
Seize opportunities	Innovation is a tool employed to seize opportunities. Take time to think about innovation: <ul style="list-style-type: none"> • Block time off in your calendar • Put your idea through a test • Combine different ideas to develop a solution

Problem Solving

Key Behaviors	How to Improve
Apply Elements of Thought	<p>The goal of problem-solving is to solve a problem. Most can be solved in various ways. Remain open to new ideas:</p> <ul style="list-style-type: none"> • Define the actual <i>problem</i> and <ul style="list-style-type: none"> ○ What are the goals? ○ What are the barriers? • Include structure as you start to generate solutions (guidelines, parameters) • Look for solutions • Don't be satisfied with the first solution you come up with, develop further • Make a decision, then implement • Seek feedback
Identify problems	<p>Detect and recognize the problem, identify the nature and be sure to define it</p> <ul style="list-style-type: none"> • Is there actually a problem? • How can it best be defined?
Gather information	<p>Generate a range of possible courses of action and get the supporting evidence for the problem being solved</p>
Develop criteria	<p>The solution should match the criterion needed to solve the problem</p> <ul style="list-style-type: none"> • Will you be satisfied with a partial solution? • Consider acceptable tradeoffs
Generate possible solutions	<p>Brainstorm and using the power of a team aids to generate various solutions to try</p>
Analyze solutions	<p>Select a solution that can be tested and yet have time for feedback and refining</p>
Compare solutions	<p>Evaluate a series of possible solutions</p> <ul style="list-style-type: none"> • Be sure solutions are acceptable
Review the results	<p>To know you successfully solved the problem you need to know what the problem is, and what impact the chosen solution has on the identified problem.</p>

Decision Making

Key Behaviors	How to Improve
<p>Evaluate options based on <i>intrinsic</i> evidence</p> <p>Evaluate options based on <i>extrinsic</i> criteria</p>	<p>Understand different choices change the outcome of your decisions. This requires prediction and judgement</p> <ul style="list-style-type: none"> • Don't be overconfident – revisit the logic of your decision

To Learn More

Visit Harvard University's "Project Zero" site to explore their "[Thinking Routine Toolbox](#)" for additional ideas on how to incorporate *Thinking Routines* into your flight. (Note: originally designed for classroom use, modify for use within your flight.)

New Problems, New Thinking Self-Assessment Worksheet

This self-assessment provides an opportunity for you to assess your own leadership skills and behaviors. These skills and behaviors are based upon the concepts addressed within this lesson. *You will use these worksheets again during the final lesson of the course.*

NOTE: Not all these skills and behaviors were covered in this lesson, rather, they reflect what an ideal flight commander should know and be able to do in this topic area.

Rate yourself on a scale of 1-5 in each of the skill or behavior areas below:

5 – Needs No Improvement

3 – Average

1 – Needs Significant Improvement

Competency Reference	Skill	Behavior	Self-Assessment (1-5)
Strategic Thinking	Critical Thinking	At the team or flight level: <ul style="list-style-type: none"> • Identify the situation or problem • Compare arguments • Identify bias • Make connections and draw conclusions • Determine relevance • Improve curiosity • _____ • _____ 	
Strategic Thinking	Creative Thinking	At the team or flight level: <ul style="list-style-type: none"> • Accept prudent risk • Build mutual trust • Exercise disciplined initiative • Maintain operational initiative • Anticipate problems • Model personal courage • Prevent complacency • Seize opportunities • _____ • _____ 	

Competency Reference	Skill	Behavior	Self-Assessment (1-5)
Strategic Thinking	Problem Solving	At the team or flight level: <ul style="list-style-type: none"> • Apply Elements of Thought • Identify problems • Gather information • Develop criteria • Generate possible solutions • Analyze solutions • Compare solutions • Review the results • _____ • _____ 	
Strategic Thinking	Decision Making	At the team or flight level: <ul style="list-style-type: none"> • Evaluate options based on intrinsic evidence • Evaluate options based on extrinsic criteria • _____ • _____ 	

Some tips:

- Ask your supervisors, peers, and subordinates how they perceive your behaviors in these areas. Often we are biased toward ourselves, meaning we tend to rate ourselves better than others actually perceive us. In leadership, we must strive to minimize the differential between how we think we behave and how others perceive our behaviors.
- Harvard University explores the development of thinking and offers many tips and suggestions at “Project Zero” – start with [Visible Thinking](#).

My Notes