

# The Grind to Fly System

## An Introduction to Elite Aviation Fitness



*The Physical and Mental Training Guide for Unparalleled Situational Awareness, Impeccable Feel, Touch and Control of the Aircraft, and the Ability to Perform Explosively and Think Clearly in the Air.*

Santiago K. Garcia



## Liability Disclaimer

The Grind to Fly System is for training purposes only and each participant must possess appropriate levels of physical fitness and relevant equipment prior to beginning this training program. This publication contains the opinions and ideas of its author. The author is not engaged in rendering health services in this publication. The reader should consult his/her personal healthcare providers prior to adopting the suggestions described in this publication.

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*To all who have given their lives pushing the envelope, and to those pursuing their passion with an uncompromising desire to achieve it.*



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# Acknowledgments

On April 4th, 2018, the world lost Thunderbird #4, Major Stephen "Cajun" Del Bagno. Using systems thinking and an uncompromising desire to enhance performance, Grind to Fly was created, with the primary mission of mitigating similar occurrences in the future and to expand what is possible in an aircraft.

This training guide is based on research conducted on aviation fitness, performance enhancement, ritual development, and stress management. I am grateful for all who have encouraged me to start this work, grind through it, and publish it. Words cannot express the appreciation and gratitude for all who have helped to make this possible. Thank you to my parents, Jerry and Ana, my best friend, Brandon To, for his insight on aviation physiology, and numeral teammates from the Air Force Academy for pushing me to be the best I can be. Thank you for keeping me going, this book would not have been possible without your support.

Most importantly, thank you to the research team, pilots and athletes who believe in the effectiveness of this fundamental training program and mentality. Their continual desire to improve and raise the bar reflect excellence as the standard. There is so much untapped potential within each and every human, and it is on us to help other people see their own light. Let's keep pushing it up. Stay grinding!



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## Three Pillars

### Commit. Grind. Fly.

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The F-16 community loses one pilot a year due to G-force Induced Loss of Consciousness (GLOC). Often overlooked factors such as exercise, stress, metabolism, environmental temperature and oxygen concentration play a significant role in the body's ability to operate normally. A 1% reduction in hydration level can reduce a pilot's resting G-tolerance by 10%. The Grind to Fly System was created to build on the United States Air Force's world class pilot standards, and ensure their pilot's spiritual, mental, emotional, and physical readiness match their flying competence and skill. It is our mission to lead the way in training pilots with specialized physical and mental skills to elevate flying capabilities, enhance performance, and mitigate safety. Through research, our team provides tangible ways to reduce respiratory and circulatory issues, hypoxia, altitude induced sickness, spatial disorientation, self-induced stress, while also providing techniques to better regulate physical and mental energy and enhance cognitive control under various circumstances.

At its core, Grind to Fly is a mindset. It isn't just about being the best pilot you can be. It is about being the best in *whatever* you have a passion for. Envisioning the future, taking deliberate action, and executing at the highest level, each and every time. Grind to race, fight, graduate, qualify, finish, or any other task that requires 100% positive energy and fighting effort. Through systems thinking and a research-based approach, the Grind to Fly team has been able to produce the true winning formula for success inside and outside of the cockpit. The Grind to Fly System begins by understanding one's true purpose and ultimate mission for flying, and ensuring a high standard of physical fitness. From there, one's physical and mental blocks are identified, eliminated, and replaced with clearly-defined, winning habits. This program's applicability integrates aviation fitness with cognitive training that will directly improve performance in the cockpit.



As you progress through this training guide, it is important that you do every exercise in the order it is specified, with the exact timing, frequency, technique and effort prescribed. Each mental and physical component has a purpose. One of the unique components of this system is the combination of performance enhancing rituals with effective decision making parameters. Training these two under incremental stress provides a platform from which to continually grow. Experiencing complex physical challenges in a controlled environment and learning how to retain mental clarity is how this system differs from any rudimentary fitness or mental training guide. What the mind can conceive, you can achieve. Stay true to the path, grind through this program, and you will get to where you need to be!



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# The Grind to Fly System

## Phase 1: The Foundation

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### *Identifying Prosperity & Meaning in Life and Aviation*

Being aware of the most important reasons for flying will help guide future obstacles and stressors that will inevitably come your way. Below are a series of progressive questions that will bring out what the driving force is behind becoming the best aviator possible. Without this understanding, the struggle and aggressive demands of this career field can become paralyzing.

#### Section 1: Looking Within

In order to become a new and improved version of yourself, it is first necessary to look within and identify what it is that drives you to make the choices you do. Reflect on what it is that has gotten you where you are today, and what has to change in order to go where you desire.

1. What kind of person do you want to become?

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2. How would you like your family and friends to view you?

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3. How specifically do you envision servicing the world?

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4. What accomplishments would bring you joy, should you achieve them?

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5. How would achieving these goals positively influence others?

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*Using the answers to the previous questions, briefly outline the vision of your foremost purpose.*

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## Section 2: Understanding Why

Below are several questions to aid in understanding the most important reasons for flying. Similar to the concept of knowing ourselves, knowing the reason for flying is essential to making progress in mental, emotional, and spiritual development.

- 1.** In what way does pursuing perfection in the aircraft help you achieve your primary purpose in life?

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- 2.** When considering your overall development, how significant is flying?

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3. Who have you/will you become because of your commitment to flying?

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4. What might be some negative aspects of using flying as a means to lift your self-confidence/esteem/value?

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5. How would you like people to view or describe you as a pilot?

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**6.** What is the one thing that matters most to you as a pilot?

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**7.** As a pilot, what does true success look like to you?

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**8.** At what point would the sacrifice, dedication, and commitment invested into flying become worth it?

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*Using the answers to the previous questions, articulate clearly your underlying purpose for flying.*

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## *Developing the Fighter's Edge*

The Fighter's Edge physical development plan came from the understanding that there is not a consistent standard for aviation fitness. Pilots' physiologies can range anywhere from world-class fitness to meeting the bare minimum. When it comes down to the core components of elite aviation fitness, it primarily involves the consistent, rapid firing of fast-twitch muscles, core strength and stability, anaerobic stamina, proper functionality of the central nervous system, and maintaining stability and strength in the neck and back. The athletes that go through this program will achieve a standard of physical and mental training consistent across the Grind to Fly community.

The first three weeks of this program are designed to train for mental and physical stamina. Many of these exercises may appear simple, but over time will train your body and teach your brain to respond in ways not experienced in traditional workouts.

Isometric, bodyweight, mobility and movement exercises are used to get the body to the standard needed for the following two phases. In the first phase, you will test your ability to remain calm in the uncomfortable. Pay attention to every detail, and do not shortcut, skip or change the times, repetitions, or sequence of the exercises. This program contains exercises that are tweaked in specific ways to reach the goal we've set forth. If you are unable to complete an exercise to its full duration/repetition/intensity level, stop for a brief moment and recover. When you are ready, start the timer/repetition count/intensity from where you left off. It is 100% essential to do every exercise to the standard set forth.

It is important to note that this program provides specific ways on how to warm-up the body for optimal performance, and methods to reduce recovery time and soreness.

Emphasize deep and controlled breathing, continual engagement of the core and glutes, and record results as conditions permit. There is ample space to record times, maximum repetitions, and how you feel in this program. It is highly recommended that you keep track of your progression, as it aids in personal accountability. Give this series a chance, and do not quit before it really gets going.



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## Phase 1: The Fighter's Edge

Workout Schedule: *Weeks 1-3*

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	<b>Day 1</b>	<b>Day 2</b>	<b>Day 3</b>	<b>Day 4</b>	<b>Day 5</b>	<b>Day 6</b>	<b>Day 7</b>
<b>Week 1</b>	Fighter's Edge <i>Series 1</i>	Fighter's Edge <i>Series 2</i>	Fighter's Edge <i>Recovery Series</i>	Fighter's Edge <i>Series 1</i>	Fighter's Edge <i>Series 2</i>	Fighter's Edge <i>Recovery Series</i>	Total Rest
<b>Week 2</b>	Fighter's Edge <i>Series 1</i>	Fighter's Edge <i>Series 2</i>	Fighter's Edge <i>Recovery Series</i>	Fighter's Edge <i>Series 1</i>	Fighter's Edge <i>Series 2</i>	Fighter's Edge <i>Recovery Series</i>	Total Rest
<b>Week 3</b>	Fighter's Edge <i>Recovery Series</i>	Fighter's Edge <i>Series 1</i>	Fighter's Edge <i>Recovery Series</i>	Fighter's Edge <i>Series 2</i>	Fighter's Edge <i>Recovery Series</i>	Total Rest	Total Rest

### Required Equipment

- PVC Pipe
- Foam Roller
- Resistance/Elastic Band
- Pull-Up Bar
- Bench Press
- Lat Pulldown Machine
- Seated Cable Row Machine

*The following pages explain in depth the repetition, timing, duration, and necessary instructions for the respective series.*



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# The Fighter's Edge

## Series 1

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1. Warm-Up
  - a. Jogging: 10 minutes.
  - b. Hip Flexor Stretch: 30 seconds each leg.
  - c. PVC Pipe Shoulder Passthrough: 10 times forward, 10 times backward.
  - d. Core Activation
    - i. Plank: 30 seconds.
    - ii. Plank with Alternating Leg Lifts: 30 seconds, continue to alternate legs.
    - iii. Side Plank: 30 seconds each side.
    - iv. High Plank: 30 seconds.
  - e. Push-ups: 25 repetitions.
  - f. Air Squats: 25 repetitions.
  - g. Foam Roll: As needed.
2. Core & Legs
  - a. Air Squat Hold & Hip Bridges
    - i. Week 1: 30 seconds/35 repetitions.
    - ii. Week 2: 60 seconds/25 repetitions.
    - iii. Week 3: 90 seconds/15 repetitions.

*Hold the Air Squat for the designated time and proceed directly to the Hip Bridges.*
  - b. Arms-High Partial Sit-up
    - i. Week 1: 20 repetitions.
    - ii. Week 2: 25 repetitions.
    - iii. Week 3: 30 repetitions.





c. Sumo Stance Squat Hold & Single Leg Hip Thrust

- i. Week 1: 30 seconds/35 repetitions each leg.
- ii. Week 2: 60 seconds/25 repetitions each leg.
- iii. Week 3: 90 seconds/15 repetitions each leg.

*Hold the Sumo Squat for the designated time and proceed directly to the Single Leg Hip Thrust. Do both legs following the Squat Hold.*

d. Flutter Kicks

- i. Week 1: 20 repetitions each leg.
- ii. Week 2: 25 repetitions each leg.
- iii. Week 3: 30 repetitions each leg.

e. Close Stance Squat Hold & Fire Hydrants

- i. Week 1: 30 seconds/35 repetitions each leg.
- ii. Week 2: 60 seconds/25 repetitions each leg.
- iii. Week 3: 90 seconds/15 repetitions each leg.

*Hold the Close Stance Squat for the designated time and proceed directly to the Fire Hydrants. Do both legs following the Squat Hold.*

f. Leg Raises

- i. Week 1: 10 repetitions.
- ii. Week 2: 15 repetitions.
- iii. Week 3: 20 repetitions.

g. Spiderman Lunge with Hip Lift & Rotation

- i. Week 1: 4 repetitions each side.
- ii. Week 2: 6 repetitions each side.
- iii. Week 3: 8 repetitions each side.

h. Seated Knee Tuck

- i. Week 1: 10 repetitions.
- ii. Week 2: 15 repetitions.
- iii. Week 3: 20 repetitions.



- i. Forward Lunge Hold & Step-ups
    - i. Week 1: 30 seconds/35 repetitions each leg.
    - ii. Week 2: 60 seconds/25 repetitions each leg.
    - iii. Week 3: 90 seconds/15 repetitions each leg.

*Hold one side for the designated time and proceed directly to the Step-Ups for the same leg. Switch legs and repeat the process.*
  - j. V-up
    - i. Week 1: 25 repetitions.
    - ii. Week 2: 30 repetitions.
    - iii. Week 3: 35 repetitions.
  - k. Bulgarian Split Squat & Single Leg Romanian Deadlift
    - i. Week 1: 10 repetitions each leg/8 repetitions each leg.
    - ii. Week 2: 15 repetitions each leg/10 repetitions each leg.
    - iii. Week 3: 20 repetitions each leg/12 repetitions each leg.

*Perform the Single Leg RDL as quickly as possible following the Bulgarian Split Squat.*
3. Mobility & Prehab
- a. Bird Dog
    - i. 30 seconds each side.
  - b. Cobra Stretch & Downward Facing Dog Stretch
    - i. 30 seconds each stretch.

*Transition from Cobra Stretch to Downward Facing Dog Stretch seamlessly.*
  - c. Frog Stretch
    - i. 30 seconds.
  - d. Seated Pigeon Stretch
    - i. 30 seconds each leg.
  - e. Spiderman Stretch
    - i. 30 seconds each leg.



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# The Fighter's Edge

## Series 2

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1. Warm-Up
  - a. Jogging: 10 minutes.
  - b. Hip Flexor Stretch: 30 seconds each leg.
  - c. PVC Pipe Shoulder Passthrough: 10 times forward, 10 times backward.
  - d. Core Activation
    - i. Plank: 30 seconds.
    - ii. Side Plank: 30 seconds each side.
  - e. Elastic Band Shoulder Activation
    - i. Diagonal Band Pull Aparts: 15 repetitions.
    - ii. Reverse Fly: 15 repetitions.
    - iii. Front Raise: 15 repetitions.
    - iv. Shoulder Press: 15 repetitions.
  - f. Air Squats: 25 repetitions.
  - g. Foam Roll: As needed.
2. Core & Upper Body
  - a. Push-up Hold & Shoulder Tap Plank
    - i. Week 1: 20 seconds/10 repetitions each side.
    - ii. Week 2: 45 seconds/ 10 repetitions each side.
    - iii. Week 3: 60 seconds/10 repetitions each side.

*Immediately follow the Push-up Hold with the Shoulder Tap Plank. Alternate arms.*



b. Bench Press Hold & Abdominal Leg Lifts

- i. Week 1: 45 seconds/10 repetitions.
- ii. Week 2: 60 seconds/12 repetitions.
- iii. Week 3: 90 seconds/14 repetitions.

*When performing the Bench Press Hold, use 50% of your one-repetition maximum. Immediately follow the Bench Press Hold with Abdominal Leg Lifts while lying down on the bench. Use the barbell as leverage.*

c. Dumbbell Chest Fly & Spiderman Push-ups

- i. Week 1: 10 repetitions/5 repetitions each leg.
- ii. Week 2: 8 repetitions/10 repetitions each leg.
- iii. Week 3: 6 repetitions/12 repetitions each leg.

*When performing the Chest Fly, time under tension is more important than the weight used. Be controlled and actively engaged throughout the movement. Proceed directly to the Spiderman Push-ups upon completion of the Chest Fly.*

d. Pull-up Hold & Lat Pulldown Hold

- i. Week 1: 30 seconds/30 seconds at 50% body weight.
- ii. Week 2: 45 seconds/45 seconds at 40% body weight.
- iii. Week 3: 60 seconds/60 seconds at 30% body weight.

*Move directly from the Pull-up Hold to the Lat Pulldown Hold. Avoid resting, the goal here is time under tension.*

e. Seated Cable Row Hold & Max Effort

- i. Week 1: 30 seconds at 75% body weight/as many repetitions as possible until failure.
- ii. Week 2: 45 seconds at 75% body weight/as many repetitions as possible until failure.
- iii. Week 3: 60 seconds at 75% body weight/as many repetitions as possible.

*Move directly from the Seated Cable Row Hold to the Max Effort Cable Rows. Avoid resting, and go until failure.*



3. Mobility & Prehab

a. Cuban Press

- i. 10 repetitions.

*Perform the Cuban Press with a maximum of 2 pounds. Goal is to work through the full range of motion and rehabilitate the tendons.*

b. Shoulder Pendulums

- i. 20 swings each arm.

*Perform the Shoulder Pendulum with a maximum of 2 pounds. Goal is to be controlled and initiating the motion with the shoulder.*

c. Sleeper Stretch

- i. 60 seconds each arm.

d. Seated Hamstring Stretch

- i. 60 seconds.

e. Butterfly Stretch

- i. 60 seconds.



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## The Fighter's Edge

### Recovery Series

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#### 1. Breathing

*In performing these exercises, breathe through the nose on both inhalation and exhalation.*

- a. Supine Diaphragmatic Breathing: 120 seconds.

*Laying down, breathe deeply and consistently through the nose for two minutes.*

- b. Supine Hyperventilation Breathing: 120 seconds/maximum breath hold/deep inhalation, followed by maximum breath hold.

*While this breathing may seem counterintuitive, charging the body with oxygen has many anti-inflammatory and immunity enhancing benefits. Inhale 100%, and exhale 50% for the first two minutes. On the final exhalation, hold your breath for as long as possible. When your body is begging for another breath, take huge inhalation, and hold it again for as long as possible. Return to a normal breathing pattern after this.*

- c. Supine Lateral Thoracic Breathing: 120 seconds.

*Inhaling through the nose, breathe deeply into the ribs. Maintain core contraction and inflate the rib cage and lungs with oxygen. This breathing technique is essential for exercises that require continual core engagement.*

#### 2. Rehabilitation

- a. Recovery Run: 15-20 minutes of low intensity jogging.

*Your heart rate must be controlled. You should be able to talk normally for the duration of the run.*

- b. Foam Rolling: As needed.



- c. Stretching
  - i. Standing Quad Stretch: 45 seconds each leg.
  - ii. Standing Hamstring Stretch: 60 seconds.
  - iii. Figure-Four Stretch: 45 seconds each side.
  - iv. Shoulder Rolls Forward/Backward: 20 rolls forward, 20 rolls backward.
  - v. Ear to Shoulder Right/Left: 30 seconds each side.
  - vi. Cobra Stretch: 45 seconds.
  - vii. Pretzel Stretch (Thoracic): 60 seconds each side.
  - viii. Iron Cross Stretch: 30 seconds each side.
- 3. Regeneration
  - a. Legs Up the Wall: 15 minutes.

*Performing this relaxation exercise improves circulation, controls blood-pressure, reduces anxiety, and activates the parasympathetic nervous system. Placing the feet in a vertical position triggers the lymphatic system, improving the immune and digestive system.*
  - b. Contrast Therapy Shower: 3:1 ratio. 3 minutes of hot water, 1 minute of cold water. Do three rounds.

*Increased blood pumping throughout the body is one of the most effective ways to reduce inflammation. If the cold becomes unbearable, focus on breathing deeply and taking the mind elsewhere. It is important to note, always end on cold. This leaves the body invigorated, and the senses activated.*

