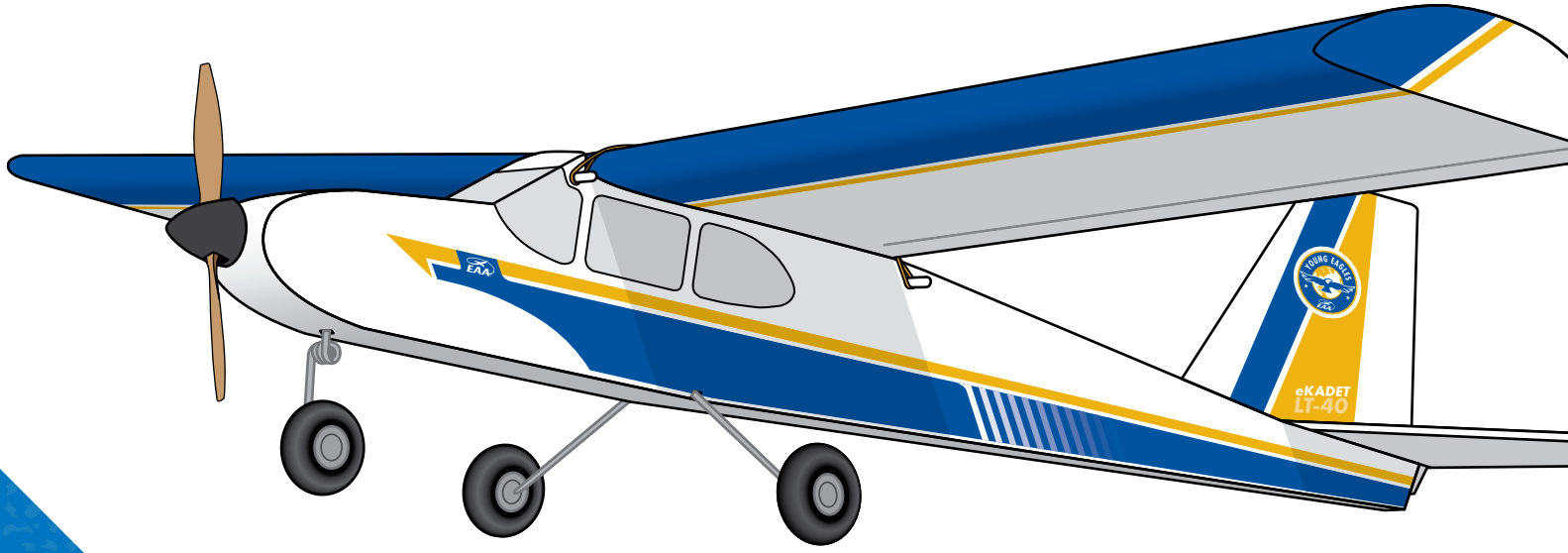
YOUNG EAGLES

BUILD AND FLY PROGRAM HANDBOOK

Your guide to hosting a successful Young Eagles Build and Fly program



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WHAT IS THE EAA YOUNG EAGLES BUILD AND FLY PROGRAM?

The Young Eagles Build and Fly program is an intensive RC model building and flying initiative to introduce kids to aircraft construction and the fundamentals of flight. This program can either be a follow-up to or lead to an EAA Young Eagles flight for each youth participant.

EAA is providing financial support for EAA chapters to economically purchase a modeling "program in a box" to engage youth within the EAA and AMA communities with hopes it sparks thought and passion for aviation. Absolutely everything needed to build and fly the model is included in the box.

The build process and subsequent flight training with the finished model are both equally important parts in the success of the program. We expect youth participants to learn as much during the build process as they do during the flying portion. The model should be completed through multiple build sessions, intermixing aircraft construction and flight theory into each session both at the build facility and flying field.

Relationships between EAA chapters and local AMA clubs are paramount to successful Build and Fly programs. AMA clubs are where technical expertise is found pertaining to building and flying RC model aircraft. They are also the avenue for flying the finished model at the local RC flying field.

Chapters and clubs will mutually benefit from the program's activity, youth engagement, and bringing members of both organizations together for a common program. This is an opportunity to nurture individuals' interest in aviation and to gain new friendships based on this shared interest, with the potential long-term goal of becoming a pilot.

Upon completion of the program, an opportunity to mentor participating kids will expose them to the world of aviation and potentially create a lifelong modeler or full-scale pilot and aviation enthusiast.

WHY SHOULD CHAPTERS AND CLUBS PARTICIPATE IN THE YOUNG EAGLES BUILD AND FLY PROGRAM?

EAA chapters that participate in the program will benefit and share their passion for aviation in numerous ways:

- To share that passion for aviation and flight with interested youths.
- To increase chapter participation and membership at the local level, including young members, through a new pathway into aviation — modeling.
- To share EAA's knowledge and resources with new participants who are interested in flying.
- To enhance EAA's position as the local access point to aviation.

PROGRAM GOALS

The primary goal of EAA's Young Eagles Build and Fly program is to grow youth participation in aviation, starting at the chapter level. To achieve this goal, the program will provide the following pathways:

- To provide a logical point of engagement following or leading to a Young Eagles experience.
- A place for kids to learn about aviation.
- A place for local EAA chapters to embrace the program and to grow chapter youth programming.
- Opportunity for local EAA members to share their aviation legacy by mentoring participants in the Young Eagles Build and Fly program.
- To create a local support group for new aviation students.
- To continue to build a sense of belonging that our EAA community is founded on.
- To provide youth the opportunity to put "mind to hand" by engaging in hands-on building and flying of radio-control aircraft.
- To facilitate and to share aviation-related knowledge.
- To build a partnership between the local EAA chapter and AMA club.

WHAT ARE THE PROGRAM REQUIREMENTS FOR A CHAPTER TO PARTICIPATE?

Your chapter is eligible to participate in the EAA Young Eagles Build and Fly program by addressing the following:

- Be an EAA chapter in good standing.
- Have an area suitable for building and storing the LT-40 eKadet model.
- Ability and desire to partner with the local AMA club and solicit AMA volunteer participation for their RC expertise.
- Have all volunteers complete EAA's Youth Protection Policy training and background check. For more information visit EAA.org/YouthProtection.
- Solicit youth participation through previous Young Eagles rallies, local school programs, clubs, or other youth outlets.
- A commitment to foster the project through to completion.
- Assorted screwdrivers, pliers set, and sanding block.

HOSTING THE YOUNG EAGLES BUILD AND FLY PROGRAM

A Young Eagles Build and Fly program is typically an extended chapter activity hosted by the local EAA chapter at the local airport and at an AMA RC flying field.

- The program consists of multiple sessions of hands-on RC model building activities, followed by flight training opportunities with the SIG LT-40 eKadet airplane at the local AMA flying field.
- Building, learning, and flying activities are encouraged during and after the RC model is completed.
- Once completed, the LT-40 eKadet provides an ongoing opportunity to teach youth to fly an RC aircraft and to learn all fundamentals of flight.

EAA chapter members and Academy of Model Aeronautics (AMA) club members who have the skill set to build and fly an RC aircraft will mentor students through the program. Regularly scheduled build sessions in conjunction with scheduled flying sessions will continue to keep kids and their parents engaged in the program.

YOUNG EAGLES BUILD AND FLY PROGRAM CHECKLIST

The following is a checklist to understand how to prepare to host the Young Eagles Build and Fly program. Our EAA chapters department will assist you with this program.

❏ Chapter identifies and creates a relationship with a local AMA club for direct participation in the program.

❏ Form a Build and Fly program committee

Small team dedicated to the planning and execution of a Young Eagles Build and Fly program will help keep event planning on track, as well as creating a group that reports directly to the chapter board on planning and program progress.

- The planning committee should include local members of the AMA club alongside EAA chapter members.
- The planning committee should state the goals of the Young Eagles Build and Fly program and work to accomplish those goals. Examples of goals are:
  1. To successfully engage 6-10+ kids in the Young Eagles Build and Fly program.
  2. To provide camaraderie within the chapter to foster an opportunity to grow aviation at the local level.
  3. To mentor kids in any aspect of aviation that interests them during the kit build process.
  4. To integrate the program within existing youth programming including Young Eagles rallies.
  5. Select chapter build facility — chapter hangar or building, airport facility, school, or AMA club

NOTE: It is not permissible to engage in youth activity at a private residence or home.

- A suitable location is required to build the RC kit where the kit can remain in place throughout the duration of the build. Space is also needed to create an additional activities area such as a youth ground school or other hands-on activities — ensure there is ample activity for the kids. Plan to have dedicated volunteers available to support the program.

❏ Chapter contacts the EAA chapters department to participate in the Build and Fly program.

- A request should be made at least six weeks prior to the scheduled start of the program.

❏ Chapter purchases EAA RC LT-40 eKadet and components through the EAA chapters office.

❏ Chapter markets to and enrolls kids into the program.

❏ Develop a curriculum that involves additional related activities.

- Ground school-style curriculum for kids.
- Include other modeling activities like rubber band or paper airplanes.
- Include RealFlight 9 simulator.

❏ Include indoor flights of included Vapor RTF aircraft.

- An assortment of aviation informational materials will be helpful to ensure continued involvement and education in the program.

❏ Regularly schedule build sessions to keep youth and their parents engaged.

OTHER ITEMS TO THINK ABOUT

Program Budget
The price of the program kit from EAA costs $500 — over $1,000 off of the MSRP price of the parts individually. Consider offering snacks such as drinks and treats on the day of the build sessions.

Program Promotion
Successful marketing during a Young Eagles rally will lead to good program engagement and raise awareness of the chapter programs. The chapter may gain new members.

Common Young Eagles Build and Fly program marketing methods:
- ❏ Young Eagles parents and children who expressed a sincere interest in aviation.
- ❏ Word of mouth by chapter members.
- ❏ Contact with the local school system.
- ❏ Bulletin board at local FBO.
- ❏ Local newspaper.
- ❏ Local news media (TV, radio).
- ❏ Social media.
- ❏ Local newsletters.

Provide Preregistration
Consider including a phone interview to preregister and to prescreen potential Young Eagles Build and Fly program participants to ensure their interests and intentions to participate in the event are sincere and realistic.

EAA Insurance Requirement
File for your EAA event insurance prior to participating in the program. The Young Eagles Build and Fly program is an EAA approved activity.

EAA Youth Protection Program
Chapter and club members who are directly involved in the program with kids are required to complete EAA's youth protection online training and background check. Participation in a youth protection program is an expectation from parent and guardians. For more information visit EAA.org/YouthProtection.

Memberships to EAA, AMA, Chapters, and Clubs
Participating AMA club members and volunteers can receive a free six-month trial EAA membership through the chapter. That membership can be found at: EAA.org/apps/joineaa/ChapterTrial.aspx

- Youth participants who have received a Young Eagles flight will receive an EAA student membership and an AMA youth membership. We encourage you to provide Young Eagles flights to all youth participants to receive these free benefits. For more information visit EAA.org/YoungEagles.
- We encourage all participants to have both EAA and AMA memberships.

Program Contents

Almost everything you need to build and fly the LT-40 eKadet is included in the box along with a RealFlight 9 RC simulator and Night Vapor Ready-to-Fly indoor airplane. The only things the chapter and club need to provide are the volunteers, a space to house the program, and a computer to run RealFlight 9. We also suggest the group purchases a few 2-foot by 4-foot ceiling tiles to use as building surfaces.

- *Young Eagles Build and Fly Handbook* – intended to be a guide and resource for chapter and club participants during the Build and Fly program process.
- LT-40 eKadet model kit and contents:

SIG Components
> Velcro to mount battery pack
> #67 rubber bands
> Thin CA glue (4 oz)
> Medium CA glue (2 oz)
> CA glue tips for above
> De-bonder for above
> Epoxy glue, 5-minute
> Epoxy glue, 2-3 hour
> Wood glue Titebond type 8 ounce
> LT 40 kit
> E Pro Flight Box

Tools/Building Equipment:
> Wax paper
> T-pins
> Masking tape
> Single-edge razor blades
> 80 grit sandpaper
> 220 grit sandpaper
> CA Accelerator / Kicker

Horizon Components
> E-Flite Power 46
> Spektrum Smart Avian 60 Amp ESC
> APC 13X8 Thin Electric Prop
> Li-Po Battery pack for above (2)
> Charger for battery pack (AC/DC w/balance connectors and leads)
> Li-Po charge sack
> RC system (6-channel)
> Servos (3)
> 3 rolls of white covering material ($8.00 each)
> Scissors
> Ruler or tape measure
> Modeling Knife kit
> Razor saw
> Triangle or plastic draftsman's triangle
> Assorted Hex "allen" Wrenches
> Drill bits 1/16", 3/32", 1/8", 5/32"
> Drill - Pin Vice
> Tamiya Basic File Set
> Soldering Iron
> Rosin Core Solder
> Flux
> Covering Iron
> Heat gun
> Covering Iron Cover
> Transmitter case
> Real Flight 9 with Transmitter
> Night Vapor RTF

Other Key Contents:

- RealFlight 9 RC simulator — we suggest building this into your build curriculum to get both volunteers and youth participants engaged in flying RC models as quickly as possible
- Night Vapor Ready-to-Fly indoor model — build this into your curriculum to teach flying techniques early in the build and also familiarize youth participants with flight techniques.

If any spare parts or subassemblies are needed, please contact SIG Manufacturing directly at **641-623-5154** or via **mail@sigmfg.com** or Horizon Hobby at **877-504-0233** or via **productsupport@horizonhobby.com**.

The SIG LT-40 eKadet Model

We have partnered directly with SIG Manufacturing to offer an updated and modernized LT-40 kit as part of the package. This updated model includes an electric powerplant, an easy to access battery bay, a sleek composite cowling, and more. The LT-40 is a very stable training platform that has trained tens of thousands of aviators to fly models over the decades. This electrified version will only make the training process easier.

Flying Your Completed LT-40 eKadet

One of the most exciting parts of the Build and Fly program is when the participants can watch the airplane first take flight. On subsequent flights, getting the youth directly engaged in flight training will really close the loop on the skills they learned during the build and applying them to flying the airplane.

One reason for teaming up with your local AMA club is access to their local flying site alongside their expertise in flying and training. The models should ONLY be flown at the local AMA club. Please be familiar with the AMA's Know Before You Fly program before flying the model.

AMA FLIGHT SCHOOL

HOW DO I LEARN MORE?

Get ready to get schooled.

AMA Flight School includes free educational materials for anyone interested in unmanned aircraft.

Designed to answer the question, "How do I ... ," AMA Flight School provides information about topics such as:

- **Battery and operational safety.**
- **Building your own multirotor aircraft.**
- **Selecting safe locations to fly.**
- **Participating in the Search and Rescue challenge with UAS4STEM. (Learn more at www.uas4stem.org.)**

There's a great pilot in you.
Go find it!

www.amaflightschool.org

AMA ACADEMY OF MODEL AERONAUTICS

THE MOST FUN YOU CAN HAVE (WITHOUT A LICENSE).

Welcome to the club.

The Academy of Model Aeronautics is the largest model aviation organization in the world. With more than 190,000 members, we're standing behind you to give you the support and guidance you need to be successful, and most importantly, have a great time.

AMA members enjoy a suite of great benefits including:

- **Liability insurance**
- **Subscription to *Model Aviation* magazine**
- **Competition opportunities**
- **Scholarships**
- **Flying site assistance**
- **Government advocacy and updates**

For more information, visit
www.modelaircraft.org
Become a member at
www.modelaircraft.org/joinAMA

Flying is just for fun.

Whether you call your model aircraft a drone or an unmanned aircraft, if you intend to fly for something other than recreation, there are certain requirements that must be met.

Visit the Know Before You Fly website at knowbeforeyoufly.org for more information.

Interested in commercial or public-use flying?

There are options available to you through the Federal Aviation Administration.

Visit www.faa.gov/uas/getting_started for more information.

KNOW BEFORE YOU FLY

For more information, visit
www.knowbeforeyoufly.org

AMA ACADEMY OF MODEL AERONAUTICS

WE'RE YOUR GUIDE TO RESPONSIBLE FLYING.

Flying guidance provided by the Academy of Model Aeronautics, the world's largest model aviation organization.

KNOW BEFORE YOU FLY Here's what you need to know:

Learn more at knowbeforeyoufly.org

1 law

Follow the rules.

- **Register at faadronezone.faa.gov**
- **Attach your FAA number onto the outside of your aircraft.**

2 limits

Fly within guidelines.

These include rules set forth by federal laws and guidelines recommended by the Academy of Model Aeronautics.

- **Fly within Federal Aviation Administration guidelines.**
- **Do not fly beyond your visual line of sight.**
- **Do not fly in high wind or during times of reduced visibility.**
- **Do not fly over or within 25 feet of bystanders.**
- **Do not fly near stadiums, large open-air events, or critical infrastructure** (correctional facilities, utilities, water treatment, etc.).

3 surroundings

Know the conditions.

Don't fly your unmanned aircraft near bystanders or during emergency situations such as wildfires, medical evacuations, or search-and-rescue operations unless authorized by the proper authorities.

Avoid potential hazards in your environment and be watchful for:

- **Manned aircraft**
- **Pedestrians**
- **Moving vehicles**
- **Busy roadways**
- **Obstacles**
- **Power lines**
- **Deteriorating weather**

4 airspace

Share the sky.

The Federal Aviation Administration currently expects unmanned aircraft operators to:

- **Stay within Visual Line Of Site (VLOS).**
- **See and avoid manned aircraft.**
- **Be aware of Temporary Flight Restrictions (TFRs) that affect the operation of unmanned or remote controlled aircraft.**

  You can find information on current TFRs at www.modelaircraft.org, www.faa.gov, and by following @modelaircraft on Twitter.

- **Be aware of airspace restrictions.**

EAA YOUNG EAGLES BUILD AND FLY PROGRAM FAQS

What is the Young Eagles Build and Fly program?
The Young Eagles Build and Fly program is an intensive RC model building and flying initiative designed for EAA chapters to partner with local Academy of Model Aeronautics (AMA) clubs to engage Young Eagles participants and other youth. The program can either be a follow-up to or lead to an EAA Young Eagles flight and is intended to further their passion for aviation.

What is included in the kit?
The program box includes an electric-powered eKadet LT-40 kit, along with every required component, radio system, and accessories; a Horizon Hobby Vapor indoor RC model; and a copy of the RealFlight 9 RC flight simulator.

What is the cost to an EAA chapter for the kit?
The program's contents would typically retail for more than $1,500, but thanks to the generous contributions of the Chapters Development Fund, which is supported by Peter Burgher of EAA Chapter 1093, and EAA's great relationships with AMA, SIG Manufacturing, and Horizon Hobby, each program kit costs only $500 plus shipping and handling for participating chapters.

Who is eligible for this program?
All EAA chapters and squadrons who are in good standing and have developed a relationship with a local AMA Club in their area are eligible to participate in this program. Relationships between EAA chapters and local AMA clubs are paramount to successful Young Eagles Build and Fly programs. AMA clubs are where technical expertise is found pertaining to building and flying RC model aircraft. They are also the avenue for flying the finished model at the local RC aircraft flying field.

Where can we find kids to participate in the program?
Advertising a future Young Eagles Build and Fly program during a chapter's Young Eagles rally is a great way to attract families and engage them in the program. Take this opportunity to invite parents to register their kids in the program. Continued involvement in and exposure to aviation activities will help foster a lifelong involvement in aviation.

Does a chapter need to complete an EAA insurance request to participate in the program?
Yes, file for your EAA event insurance prior to participating in the program. The Young Eagles Build and Fly program is an EAA-approved activity. Only one insurance request is needed, assuming the form is completed to include all activity dates. EAA.org/EventInsurance

Does the program require volunteers and mentors to participate in EAA's Youth Protection Policy?
It is common practice and a common expectation by organizations engaging in youth programs to participate in a youth protection program. All participating adult volunteers will complete EAA's Youth Protection Policy training and background check. For more information, visit EAA.org/YouthProtection.

What other activities might a chapter include during the RC build program?

The program kit includes a RealFlight 9 RC simulator, and it is suggested to incorporate this into your build curriculum to get both volunteers and youth participants engaged in flying RC models as quickly as possible. A Vapor ready-to-fly indoor RC model is also included and may be used as curriculum to teach flying techniques early in the build and familiarize youth participants with flight techniques.

Who should build the RC airplane?

The program is designed to introduce kids to aviation typically upon completion of a Young Eagles flight. The build process and subsequent RC flight training with the finished model are both equally important parts in the success of the program. Youth participants will learn as much during the build process as they do during the flying portion, as it is the kids who will build the RC model. Through chapter mentoring, the RC model project should be completed through multiple build sessions, intermixing aircraft construction and flight theory into each session at the build facility and flying field.

Can the RC build sessions be at an EAA member's house?

It is not permissible to engage in youth activity at a private residence or home. A suitable location is required to build the RC kit where the kit can remain in place throughout the duration of the build. Space is also needed to create an additional activities area such as a youth ground school or other hands-on activities — ensure there is ample activity for the kids. Plan to have dedicated volunteers available to support the program.

Where can a chapter fly an RC airplane?

The Young Eagles Build and Fly program is intended to include a local AMA club. AMA club members will be a great source or building expertise and RC flight training, specifically an AMA flying field to use for the aforementioned flight training program post-completion of the LT40 eKadet.

Where can we find additional information regarding the program?

For more information about the Young Eagles Build and Fly program, please visit EAA.org/BuildandFly and review the Young Eagles Build and Fly Program Handbook, and other helpful information.

How can we find a local AMA club near us?

Please visit EAA.org/BuildandFly to learn more about how to find AMA clubs in your area, or visit ModelAircraft.org/Club-Finder.

What do we do with the RC model after it is completed?

Have fun flying the RC model with your youth participants by joining the local AMA club. One reason for teaming up with your local AMA club is access to their flying site alongside their expertise in flying and training. The models should ONLY be flown at your local AMA club. Please be familiar with the AMA's Know Before You Fly program before flying the model. www.knowbeforeyoufly.org. Consider a second RC build project to continue to foster kids' interest in aviation.

NOTES:

During any part of the Young Eagles Build and Fly program, please do not hesitate to contact EAA headquarters with any questions or concerns that you may have at chapters@eaa.org. Enjoy the build process, flying the finished model, and introducing countless new kids and adults alike the world of aviation!

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