A Type Club's Guide to Creating a Transition Training Program
Part 2: Flight Syllabus Guide

Numerous studies have proven the correlation between aircraft accidents and low pilot experience in type. Vital as it is to study the airplane's systems, procedures and techniques as described in the Ground Study portion of this Transition Training Guide, it is critical to put that information into action with a program of flight instruction for pilots new to the type.

As a type club your organization has a unique collective wisdom about the control and handling of the aircraft type(s) you represent. Your club has the opportunity, and the responsibility, to ensure your members benefit from this collective experience to enhance safety and to support the longevity of your type. This portion of the Transition Training Guide is intended to assist type clubs with the creation of a pilot training syllabus and supporting programs.

As stated in the Preamble to this Guide, type clubs should reach out to pilots and flight instructors for input into a flight training syllabus, piloting techniques, and best practices for the operation of the aircraft your club supports. All your efforts at developing a flight training system will be for nothing if instructors in the field do not follow your recommendations. In a small fleet community or one with a tightly connected group of flight instructors, you may be able to arrive at consensus fairly quickly. In larger fleet sizes and/or with larger, more decentralized instructor force, you may need to be flexible with the content of your program over time—after your initial syllabus becomes known, you may receive additional input that causes you to amend your syllabus and recommendations. You may also find the need to provide alternate techniques for a given skill or maneuver and leave it to the individual pilot and instructor to determine which works best for him/her. There is almost never only one correct way to fly an airplane, so by providing alternatives that accomplish the same thing with a comparable level of safety you may be serving your members even better.

In many cases there are manufacturer recommendations and other documents that can help you create your type-specific training program. Even in experimental aircraft there are probably engine and other components manuals that provide guidance; many open-source government documents and manuals may also be of help. Further, several Type Club Coalition members have posted samples of their training materials on the Resources page of the TCC website (www.eaa.org/typeclubs). These documents are posted online specifically for your use as examples for you to emulate to meet your program’s needs.

The key point is that your training recommendations should be a collection of best practices as suggested by manufacturers where such data exists, pilots familiar with the aircraft your club supports, and the flight instructors who fly and instruct in the type—not dictated by a small group or a single person.

Emphasis on checklists

From the most complex aircraft to the simplest, history shows that failure to follow standard operating procedures (SOPs) is a common contributor to accidents. Written checklists are the documentation of SOP best practices in a form that is easily used in the cockpit. Your type club transition training program should emphasize checklist use in all phases of flight, and include training and evaluation on use of all checklists from preflight, through each phase of flight, to securing the aircraft.

Where standard checklists are not available (for example, in many experimental - amateur built aircraft), or existing checklists do not adequately address the systems or procedures of a specific aircraft (for example, addition of a primary flight display or GPS to a legacy aircraft), your type club should develop guidance for creating or modifying checklists applicable to the aircraft being flown. When doing so follow the FAA’s guidance, contained in SAFO 17006, which states:
...meticulously compare [custom checklists] to the manufacturer’s checklist and placards contained in [any available] POH/AFM to confirm they are consistent. This action will ensure the pilot has all pertinent manufacturer’s information during aircraft flight operations.

Many pilots (and instructors) believe that printed checklists are primarily a training tool, and that once the pilot has sufficient experience they no longer need be used. This is a dangerous fallacy, as the accident record attests. Checklists, in fact, serve many purposes regardless of the pilot’s level of experience, including to ensure:

1. **Completeness.** Especially in high workload conditions, reviewing a checklist ensures that all actions are complete, that the pilot did not forget anything.

2. **Sequence.** At times the design of an airplane or its equipment requires not only that actions be done, but that they be done in a specific order. Using checklists helps confirm that procedures are done in the proper sequence.

3. **Pace.** Using a checklist also helps the pilot establish and maintain a proper pace or speed of action. Most commonly, checklists help slow a pilot down at times when responding too quickly may mean a missed opportunity to assess conditions and the results of intermediate checklist steps.

4. **Specificity.** Many pilots routinely fly different aircraft. Often systems, procedures and techniques differ from one model of aircraft to another, or even between examples of the same model of aircraft. Use of checklists protects the pilot by causing him/her to focus on the specific airplane being flown, and to avoid using techniques applicable to one type of aircraft that are not applicable to another type.

5. **Objectivity.** Pilots often have to make quick decisions in situations where many variables demand attention, and in which the pilot may not have immediate access to all the information he/she needs to make a decision under stress. Using a checklist, especially in abnormal or emergency situations, allows the pilot to make pre-programmed responses to observed indications...in effect, to use decisions made with great thought while stress levels are very low (the time the checklist was written) during times when stress levels are extremely high and there is little time to collect information and make a decision. Checklists promote thoughtful objectivity under very subjective circumstances.

Your type club’s experts may wish to focus solely on printed checklists, or to incorporate mnemonics and/or cockpit flow checks that are backed up by use of the printed checklist. In any event, your Club should place great emphasis on checklist use, arrive at a consensus on checklist design and use, and demonstrate that using checklists is the norm regardless of the complexity of the aircraft being flown.

**Single-Seat Aircraft**

Almost all transition training occurs in multi-seat aircraft, usually with dual flight controls. Some types of aircraft, however, are single-seat. In many cases there is no two-seat equivalent available to be flown. In these cases it is even more critical to document piloting best practices, and present aircraft systems, procedures and techniques information to transitioning pilots in a structured form.

One tool type clubs might use for pilots transitioning to a single-seat aircraft is the development of an Equivalent Aircraft List. Such a List would identify other types of aircraft with similar handling or other characteristics to the single-seat aircraft. The intent is to encourage a pilot to obtain dual instruction in an equivalent aircraft prior to first flight in the single-seat aircraft.

For example, consensus among instructors in the type club supporting the single-seat Zippy Quick tailwheel variant (ZQ/TW) might be that ground handling and takeoff/landing roll control response is similar to a Piper Cub or Aeronca Champ, and that its inflight maneuvering and stall characteristics are roughly akin to a Grumman Tiger. The type club might recommend a transition training preparation syllabus involving a certain amount of dual instruction on taxiing, takeoff and landing in a Cub/Champ-
type airplane, and flight maneuvers including steep turns, slow flight and stalls in a Grumman Tiger, prior to first flight in the single-seat ZQ/TW.

See the FAA’s Advisory Circular AC 90-109A: Transition to Unfamiliar Aircraft. Appendix 1 and 2 of this document include aircraft grouped into families based on their performance, equipment, maintenance requirements, or other considerations.

**Program Levels**
Creating a pilot training program may seem like a monstrous task. Your Club may not feel it has the resources to create a training system. The reality is that there are different scopes, or levels of transition training program. You need only develop what works for you. As you’ll see, once you begin the process, you may find it is natural to step up over time from less ambitious programs to higher levels of instruction.

The Type Club Coalition recognizes three levels of transition training program. We call them *Pilot’s Notes, Training for Proficiency*, and *Training for Mastery*.

**Pilot’s Notes**
The first level of training program is a documentation of Pilot’s Notes, a curated outline of suggestions and techniques for safely and efficiently flying the airplane. A Pilot’s Notes-level program is essentially a detailed outline a pilot might review with his/her instructor, incorporating the suggestions in whatever transition training the instructor provides. Pilot’s Notes should highlight any type-specific techniques or procedures dictated by that type’s unique systems, design or flight characteristics. It may or may not suggest a specific syllabus for flight training—that is up to the pilot and instructor.

Examples of Pilot’s Notes include:

1. **STARTING**
   The throttle should be closed, and with the header tank fuel valve turned on, the engine should be primed two to six "shots" depending on weather. The ignition switch can then be turned to BOTH, the throttle opened slightly, about 1/8", and the starter engaged.
   If the engine fails to start, the operation should be repeated. If the engine loads up or becomes flooded, the ignition switch should be turned off and with the throttle opened fully, the starter should be held on to turn the engine several revolutions. Then the throttle should be returned to the position for normal starting, and with the switch turned to the BOTH position to start the engine, the starter should again be engaged. This model engine is likely to flood. Flooding can usually be detected by the odor of gasoline vapor near the air intake.
   After starting, the engine speed should be kept below 900 RPM, and the oil pressure watched. The gauge should show pressure within 15 seconds after starting.

2. **APPROACH SET-UP/PATTERN ENTRY**
Prior to reaching the Initial Approach Fix or while on vectors to intercept the Final Approach Course for an instrument approach, slow the airplane to 90 miles per hour using this configuration:
   - Carb heat: OH
   - Power: 2100 RPM
   - Flaps: 10° (first notch)
   The airplane will settle into level flight at approximately 90 mph indicated airspeed with the elevator trim in approximately the Takeoff setting. Add or reduce RPM slightly as needed to compensate for aircraft weight and density altitude.
   When intercepting the glideslope/advisory glidepath, reduce power by 200-300 RPM. The airplane will nose down slightly to maintain speed, and descend at approximately 500 FPM with no change in airplane trim. Add or reduce RPM slightly as needed to maintain glideslope/glide path alignment with variations in ground speed and approach path angle. Fly at this attitude, speed, rate of descent, flap position and trim setting until “going visual” or until beginning a missed approach.
Use this same entry technique—carburetor heat, 2100 RPM, one notch of flaps and trimmed for 90 MPH in level flight—prior to entering the VFR traffic pattern and until you begin descent from pattern altitude.

3. **POWER-ON/DEPARTURE STALL**

4. **ENGINE FAILURE GLIDE DEMONSTRATION**

---

**Training for Proficiency**

The second level of type club flight training is what we call “training for proficiency.” This level starts with creating of Pilot's Notes and adds a recommended transition training flight syllabus. It also suggests criteria for selecting an instructor to administer the transition training—instructor certification, training, instructional experience and time in type. Optimally the type club will maintain a current list of flight instructors meeting those criteria and their contact information on its website.
Guided by the type club, the transitioning pilot will review the Ground Study materials, then locate a flight instructor meeting the suggested criteria. The two will then complete the recommended syllabus to the suggested completion standards.

Examples:

5. SYLLABUS LESSON PLAN

Flight Lesson #2: Basic Maneuvers

Objective: Introduce student to the flight characteristics of the ZippyQuick series of aircraft by introducing basic flight maneuvers and procedures. This lesson is to be completed after student completes flight lesson #1.

Planned Time: As Needed

Content:

- Basic Flight Maneuvers
  - Straight and level flight
  - Normal climbs and descents
  - Shallow and normal turns
- Performance Maneuvers
  - Steep turns
  - Slow flight
- Stall Maneuvers
  - Power off stalls
  - Power on stalls
  - Accelerated stalls
  - Effect of flap settings
- Ground Reference Maneuvers
  - S-turns across a road
  - Turns around a point
  - Rectangular course

Note: Instructor may repeat lesson if necessary to ensure student attains mastery of aircraft control necessary to move onto next lesson.

Completion Standards: Student will become familiar with the performance and handling characteristics of the ZippyQuick aircraft. Maneuvers will be performed within practical test standards applicable to the pilot certificate held by the student.

6. COMPREHENSIVE TRANSITION TRAINING GUIDE
7. PREREQUISITES FOR FLIGHT INSTRUCTORS

Flight Instructors must meet the following minimum requirements:

1. Hold a current Certified Flight Instructor certificate or a current Sport Pilot Flight Instructor certificate.
2. Have a minimum of 5 hours flight time in the type of training aircraft being used.
4. Meet medical certification requirements called out in 14 CFR Part 61 as they pertain to the training being given.
5. Possess a Letter Of Deviation Authority (LODA) from the cognizant FAA Flight Standards District Office (FSDO) listing the specific aircraft being used for the training and the instructor’s name.

Training for Mastery
The highest level of type club-led transition training is Training for Mastery. In this system the type club specifies the flight training syllabus and completion standards, trains and accredits the instructors who provide the training, and reviews completed training records to ensure the pilot experienced all skills, tasks and maneuvers on the syllabus and performed at or better than completion standards. After the type club reviews and approves flight training records, it issues a Course Completion Certificate to the transitioning pilot. That certificate may be recognized by insurance companies for a discount on policy premiums. In some airplane types a training completion certificate may be a requirement to obtain insurance at all.

Examples:

8. TRANSITION TRAINING FLIGHT CHECKLIST
9. PILOT AND FLIGHT INSTRUCTOR STANDARDS
10. INSTRUCTOR’S TRAINING CHECKLIST

[Image of ADS Air Safety Foundation Flight Instructor Checklist]

1. Make sure that all required information and training materials are available for the instructor.
2. Ensure that the training materials are up-to-date and cover the latest changes in flight regulations.
3. Check that the flight instructor has completed all necessary training and is prepared to teach.
4. Confirm that all flight equipment and instruments are in good working order.
5. Ensure that the flight instructor has adequate knowledge and experience to teach the flight.
6. Verify that the flight instructor has completed all necessary training and is prepared to teach.
7. Confirm that the flight instructor has adequate knowledge and experience to teach the flight.
8. Ensure that the flight instructor has completed all necessary training and is prepared to teach.
9. Verify that the flight instructor has adequate knowledge and experience to teach the flight.
10. Ensure that the flight instructor has completed all necessary training and is prepared to teach.
11. Confirm that the flight instructor has adequate knowledge and experience to teach the flight.

11. FLIGHT INSTRUCTOR ACCREDIATION

How to Become a BPPP Instructor

Here’s the process by which new instructors will be brought into the BPPP instructor cadre:

1. A candidate is nominated to serve as an instructor by the BPPP
2. The candidate submits an application to the BPPP
3. The candidate is interviewed by BPPP staff
4. The candidate takes an exam to become a BPPP
5. The candidate completes the BPPP instructor training
6. The candidate is qualified to teach BPPP
7. The candidate is assigned to a BPPP
8. The candidate is monitored on a regular basis
9. The candidate is evaluated on a regular basis
10. The candidate is re-certified on a regular basis
11. The candidate is certified to teach BPPP

For more information, visit the BPPP website at www.bppp.org.

©2013 ADS Air Safety Foundation. All rights reserved.

TCC Transition Training Guide Part 2: Flight Syllabus
Which Level Works for your type club?

It’s up to the type club leadership to determine which level of transition training program meets your needs. type club staffing, volunteerism, finances, instructional expertise, and risk management strategy will all factor into your decision. You may find that by starting at the Pilot’s Notes level first you lay the groundwork for an easy transition to Training for Proficiency level, and later find a Training to Mastery level program is within your Club’s reach.

In a Pilot’s Notes-level training system the type club leaves it to the individual pilot to learn about the airplane, and may not may not suggest the specific skills, maneuvers or completion standards for transition flight instruction—if the pilot receives flight instruction at all. This level leaves success or failure to the skills and judgment of the transitioning pilot.

ADVANTAGES: Pilot’s Notes is the easiest way for a type club to document its collective experience flying the aircraft type and getting vital information and advice to transitioning pilots. It requires the least amount of investment in type club time and finances, and does not require constant administrative attention.

DISADVANTAGES: Pilot’s Notes does not require a pilot to demonstrate understanding of the information provides, or application of the information to actual flying. The type club has no quality control and limited feedback from the pilot community. It provides the type club little liability protection and may expose the club to liability for the use of the information provided.

The Training for Proficiency level provides the type club’s best recommendations for flight training and may suggest qualified flight instructors, but the type club does not vet instructors, does not assure that flight instruction actually takes place, and has no system of confirmation and review to determine the full syllabus was presented to the transitioning pilot or whether he/she flew to the club’s standards for completion. This level leaves success or failure in the hands of a potentially unknown, untrained and un-vetted instructor pilot.

ADVANTAGES: This level provides more structured guidance on those items that should be included in transition training and the qualifications of instructors who should provide that instruction. It does not take much more investment or administrative attention than the Pilot’s Notes level—it is fairly easy to advance to Training for Proficiency once the club has established the lower-level program.

DISADVANTAGES: This level does not ensure that the pilot flies with a qualified instructor, that he/she experiences the entire flight syllabus using the techniques and procedures the club recommends, or that the pilot performed to course completing standards. It provides the type club limited liability protection and may expose the club to liability for the use of the information provided.

The Training for Mastery level not only documents the type club’s Best Practices for the option of the aircraft is supports, it also ensures to the best of the club’s ability that the training is conducted by qualified instructors using Club-endorsed techniques and procedures, that the entire syllabus was presented to the transitioning pilot, and that the pilot performed to established completion criteria. Training for Mastery is the pinnacle of type club-sponsored training and provides the maximum customers service for Club members.

ADVANTAGES: This level provides standardized guidance on those items that are included in transition training, vets and standardizes the instructors who provide that instruction, and fully documents the pilot’s performance. It provides the type club a mechanism to maintain quality control over the entire instructional process. Training for Mastery programs are a significant value-added service to recruit and retain members in the type club, and enhance the club’s reputation and standing in the industry. Flight Instruction may be used as a profit center to help fund the type club. This level may assist the type club in defense of any liability that results from flight instruction and related technical services, especially when it can document pilots who fail to meet completion standards and withholds endorsement and completion certificates from those pilots.

9 TCC Transition Training Guide Part 2: Flight Syllabus
DISADVANTAGES: Setting up and ongoing administration of a Training for Mastery program is time- and resource-intensive. Depending on the size of the type club’s fleet it may require one or more full-time employee to administer. There may be significant ongoing time commitment and costs associated with standardizing flight instructors. The club will have to carefully vet instructors and monitor the process and outcomes of training or it may face legal liability in the event of an aircraft accident involving a pilot during or subsequent to flight training.

Hopefully the sample text on the previous pages has provided your type club with an example of how each section should be completed.

Additional examples of training manuals, including the full text that you can adapt to your aircraft type, are available from the EAA Type Club Coalition (TCC) at www.eaa.org/typeclubs. You can use this Guide, these examples, and your type club’s expertise to create your own training outline.

If you need additional assistance please contact the EAA TCC point person, tcc.chairman@eaa.org.