

With the advent of advanced avionics with glass displays, GPS, and autopilot, flying has become more complex. Avionics and automation systems are valuable resources, and flight instructors should teach learners how to use this equipment properly. If learners do not fully understand how to use the equipment, or if they rely on it so much that they become complacent, it can become a detriment to safe flight.

Checklists are essential flight deck resources for verifying that the aircraft instruments and systems are checked, set, and operating properly, as well as ensuring that the proper procedures are performed if there is a system malfunction or inflight emergency. Learners reluctant to use checklists can be reminded that pilots at all levels of experience refer to checklists, and that the more advanced the aircraft is, the more crucial checklists become. With the advent of electronic checklists, it has become easier to develop and maintain personal checklists from the manufacturer's checklist with additions for specific aircraft and operations.

In addition, the AFM/POH, which is required to be carried onboard the aircraft, is essential for accurate flight planning and for resolving inflight equipment malfunctions. Other valuable flight deck resources include current aeronautical charts and publications, such as the Chart Supplement (CS).

It should be pointed out to learners that passengers can also be a valuable resource. Passengers can help watch for traffic and may be able to provide information in an irregular situation, especially if they are familiar with flying. A strange smell or sound may alert a passenger to a potential problem. The PIC should brief passengers before the flight to make sure that they are comfortable voicing any concerns.

External Resources

Possibly the greatest external resources during flight are air traffic controllers. ATC can help decrease pilot workload by providing traffic advisories, radar vectors, and assistance in emergency situations. When learners use ATC during training, they develop the confidence to ask controllers to clarify instructions and to use ATC as a resource for assistance in unusual circumstances or emergencies. Flight Service specialists can provide updates on weather, answer questions about airport conditions, and may offer direction-finding assistance on frequencies used for flight plan communications. These services can be invaluable in enabling pilots to make informed inflight decisions.

Throughout training, learners can be asked to identify internal and external resources, which can be used in a variety of flight situations. For example, if a discrepancy is found during preflight, what resources can be used to determine its significance? In this case, the learner's knowledge of the aircraft, the POH, an instructor or other experienced pilot, or an AMT can be a resource which may help define the problem. During cross-country training, learners may be asked to consider the following situation. On a cross-country flight, you become disoriented. Although you are familiar with the area, you do not recognize any landmarks, and fuel is running low. What resources do you have to assist you? Learners should be able to identify their own skills and knowledge, aeronautical charts, ATC, Flight Service, and navigation equipment as some of the resources that can be used in this situation.

Workload Management

Effective workload management ensures that essential operations are accomplished by planning, prioritizing, and sequencing tasks to avoid work overload. As experience is gained, a pilot learns to recognize future workload requirements and can prepare for high workload periods during times of low workload. Instructors can teach this skill by prompting their learners to prepare for a high workload. For example, when en route, the learner can be asked to explain the actions that need to be taken during the approach to the airport. The learner should be able to describe the procedures for traffic pattern entry and landing preparation. Reviewing the appropriate chart and setting radio frequencies well in advance of need helps reduce workload as the flight nears the airport. In addition, the learner should listen to the Automatic Terminal Information Service (ATIS), Automated Surface Observing Systems (ASOS), or Automated Weather Observing System (AWOS), if available, and then monitor the tower frequency or Common Traffic Advisory Frequency (CTAF) to get a good idea of what traffic conditions to expect. Checklists should be performed well in advance so there is time to focus on traffic and ATC instructions. These procedures are especially important prior to entering a high-density traffic area, such as Class B airspace.

To manage workload, items should be prioritized. This concept should be emphasized to learners and reinforced when training procedures are performed. For example, during a go-around, adding power, gaining airspeed, and properly configuring the aircraft are priorities. Informing the tower of the balked landing should be accomplished only after these tasks are completed. Learners should understand that priorities change as the situation changes. If fuel quantity is lower than expected on a cross-country flight, the priority can shift from making a scheduled arrival time at the destination, to locating a nearby airport to refuel. In an emergency situation, the first priority is to fly the aircraft and maintain a safe airspeed.

Another important part of managing workload is recognizing a work overload situation. The first effect of high workload is that the pilot begins to work faster. As workload increases, attention cannot be devoted to several tasks at one time, and the pilot may begin to focus on one item. When the pilot becomes task saturated, there is no awareness of inputs from various sources; decisions may be made on incomplete information, and the possibility of error increases. [Figure 1-14]