
12.1 RECOMMENDED METHOD FOR PROCEDURE DEVELOPMENT

12.1.1 PROCEDURE DEVELOPMENT IS PAINFUL

- A. Accomplishing detailed procedure development with aviation technical personnel, such as pilots and mechanics, is a bit like pulling their teeth. They want it to be over fast, without pain.
- ◆ They will want to skip the details, because “everyone knows how to do that, there is no need to tell them the steps (tribal knowledge)” or
 - ◆ This worked well at ...[fill in any airline's name].
- B. Many aviation technical personnel in the smaller or new-start airlines are adept at moving airplanes in spite of the daily crises. Some have made entire careers by making on-the-spot decisions and taking actions which moved those airplane, passengers and cargo. These types of fixes can be described by a variety of terms, such as—
- ◆ “Quick-fix”
 - ◆ “Jury-rigged”
 - ◆ “Work-arounds”
 - ◆ “Rube Goldberg”
- C. They are proud of their track record and are very reticent to sit down and mull over a single procedure to make sure that it does not contain steps (or omits steps) that may result in “latent failures.” Assisting them to detail each step, then assess each step in terms of “hazards” and “risk” to consider the need for “controls” is a bit like speaking to them in Greek.
- D. The opposite of that extreme is the person who was a devoted employee of a now defunct airline, such as Midway. The policies and procedures of that airline were burned into their brain. They still are in lock-step to that methodology. Given the need to develop a procedure, they want to just “drop-in” or “copy” the policy or procedure used in their previous airline into the new situation, because “it worked.” Counseling these individuals to develop procedures that contain the “who,” “what,” “when,” “where” and “how” results in a lot of loud “whys.”
- E. Most of the individuals that you deal with in process and procedure development at an airline, especially at an airline that is not flying, will fall somewhere in these two categories. They view terms like “interfaces,” “process measures,” “systems safety,” etcetera much like male “pick-up” lines. They will say them for the FAA, but they have not yet conceptualized them and do not understand the benefits that can be derived the application of the principles.
- F. Assisting these individuals in process design and procedure development is painful for them - and as a result - for you. There are several consultant trade secrets that make this process easier on them - and as a result - on you. But you can only reduce - not deaden - that pain. So you will also need a great deal of patience and timing.

12.1.2 WHY PROCEDURE DEVELOPMENT FAILS

- A. Most procedures development in a small airline fails to achieve the desired detail because it is done in paragraph or listing text. This is the way most airline people have been writing procedure since the days of the Ford Tri-Motor. Either method results in the author leaving out either critical steps or necessary accompanying policy or information.
- B. When procedures are written in paragraph format, the actual break between the steps are lost on the reader. Plus it is difficult in the authoring process for other persons to logically follow and comment on the individual steps.
- C. The numbering or “listing” of procedure steps in paragraph text more closely replicates a real procedure. But this method does not lend itself to detailed procedure development in group

situations. Again there is a tendency to “lose” steps or forget to attach key details to the individual steps..

- D. Flowcharting methods (highly recommended in the early stage of process design) also tends to fail in the airline procedure development where it is necessary to get down to the “nitty-gritty” of the procedure(s). Many persons have difficulty accepting or comprehending the use of flow charts to convey knowledge in a manual, because of the limited ability to attach the accompanying policies, information, and instructions.

12.1.3 RECOMMENDED METHOD

- A. The best method to start a detailed procedure development is to use the AVSOG Procedure Table as a starting point.
- B. This method forces the participants to think of each individual step of the procedure. It also forces them to consider the location of accompanying policies, notes and references. Consider the following example that was recently included in a manual.

Step	“B” Flight Attendant
↓	Sterile cockpit light is turned off...
1	Make the Ascent announcement.
2	Make the End of Sterile Cockpit announcement.
3	Make the Beverage announcement.

12.1.3.1 The “Who” & “Where”

The “who” is obviously identified in the top row of the table as “B Flight Attendant.” Because we just lifted this out of a series of procedures in the manual, the “where” is not in context. But we could add this information for clarity

Step	“B” Flight Attendant (Sitting in the ERJ-170 aft jumpseat during the climb after takeoff)

12.1.3.2 The “What”

The author of this procedure used a paragraph header to provide the ‘what’ in the manual, but for the purpose of demonstrating the use of a procedure table in isolation, we will add our “what” as a line above the “who.”

Procedure for Making After-Takeoff Announcements	
Step	“B” Flight Attendant (Sitting in the ERJ-170 aft jumpseat during the climb after takeoff)

12.1.3.3 The “When”

The “when” is provided in the second table row opposite the down arrow - when the “sterile cockpit light is turned off...” This is the trigger event for this procedure. Note that this particular event is also a step in someone else’s (pilot’s) procedure. We call this type of initiating event a “handover.” It is the transferring step from the previous procedure that initiates or “starts” this procedure. This event could also be caused by a specific point or time during the overall process

↓	Sterile cockpit light is turned off...
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12.1.3.4 Definition of a “Procedure”

- A. Before we proceed, we should all agree on what a procedure is and is not. For the purpose of this discussion, a procedure will be “...a series of action steps that *must occur in a specific order.*” An example of a procedure would be the Before Landing Checklist. It is necessary for safety that a specific series of action steps be followed. These action steps are the “how” of the procedure.
- B. In contrast, we define “instructions” as “...steps that should occur, but *may occur in random order.*” Instructions are used for listing items that must occur or be considered when accomplishing a task. An example of instructions would be the directions for completing a form. It is not necessary to follow a specific series of action steps to satisfactorily complete the form.

12.1.3.5 The “How”

- A. The “how” in our example is somewhat vague with missing steps since the procedure is taken out of the manual context. The first step listed is “make the ascent announcement.” The reader of this procedure in isolation would not know that there is other procedural guidance for how to run the equipment to use the public address system or that the actual words of the “Ascent” announcement are listed elsewhere in that manual.

- B. Let’s assume - for the purposes of illustrating the nitty-gritty of procedure development in isolation - that this information is not elsewhere in the manual. Our example then should be all-inclusive.

- ◆ We must insert the steps for working the equipment;

- This also applies to the original workup of a procedure.
- Insert all theoretically possible steps - This is very important to the development.
- You can always remove steps later when considering it in the context of other developed procedures or guidance within the manual.

1	Pick up the public address phone from the aft flight attendant communications panel.
2	Hold the microphone portion of the phone within 1 inch of your mouth.

- ◆ We must insert the steps to locate and have available the Ascent Announcement (unless we include those words as “information” within the procedure table);

3	Open your flight attendant manual to the section containing the Ascent Announcement.
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- ◆ Continue the procedure in nitty-gritty detail as it would have to occur;

4	Press and hold the microphone button.
5	Read the Ascent Announcement.
6	When finished, release the microphone button.
7	Locate the End of Sterile Cockpit Announcement
8	Press and hold the microphone button.
9	Read the End of Sterile Cockpit Announcement.
10	When finished, release the microphone button.
11	Locate the Beverage Announcement
12	Press and hold the microphone button.
13	Read the Beverage Announcement.
14	When finished, release the microphone button.
15	Stow the public address phone in the aft flight attendant panel.

12.1.4 FLESH-OUT THE PROCEDURE

Having accomplished the first “run-through” of the procedure we now we need to go back and add in information to flesh out this work-up of the procedure.

- ◆ If the flight attendant might need assistance on locating this announcement, add a “Refer to..” reference to provide that assistance.

3	Open your flight attendant manual to the section where the Ascent Announcement. Make the Ascent announcement. Refer to FAM 2.2 for the Ascent Announcement.
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- ◆ If you are working up a source document and this is the only procedure step in that document that needs the words to the Ascent Announcement, you may want to include them here until an Announcement chapter is built later,

5	Read the Ascent Announcement. The words are: “Ladies and Gentleman, we ask that you please remain seated with your seatbelt securely fastened. Should the Captain decide to turn off the seat belt sign you may feel free to move about the cabin as necessary, however, we do ask that for your safety any time you are in your seat you keep your seat belt fastened. Use caution when opening overhead bins as items may have shifted. We now invite you to make yourself comfortable and enjoy your flight.”
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- ◆ Maybe an If-Then table would be appropriate. For example, if the flight attendant may make the decision to recite the announcement from memory, insert an If-Then table;

5	Make the Ascent Announcement	
	If....	Then....
	Announcement memorized...	Recite announcement from memory.
	Announcement not memorized...	Read announcement text from manual.

- ◆ But If-Then Tables are primarily for decisions that management would like to standardize - so an acceptable and shorter method would be to just include a note. (A more viable use of the If-Then table is provided later in this discussion.)


5	Read the Ascent Announcement. (It is acceptable to recite the announcement from memory.)
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- ◆ During the procedure work-up, you may want to consider providing the “why” for a procedural step,

9	Read the End of Sterile Cockpit Announcement. (FAR 121.--- requires that PEDs not be operated below 10,000. The end of sterile cockpit as indicated by extinguishing of the light also marks the beginning of the period when PEDs may be used.)
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- ◆ But we recommend that when the source document is being fleshed out, the “why” for the procedure should appear in the text immediately above the procedure table to provide a lead-in to the actual steps of the procedure.

- ◆ The following procedure table is provided as an example of an If-Then Table application. Note that the If-Thens are apparently dealing with a series of policies derived from regulatory and operations specifications requirements.

✕ 4	Confirm that none of these are applicable before completing the Special Flight Permit. (TGF-212)	
	If...	Then...
	Aircraft involved in accident, incident, occurrence, or having primary substantial structural damage?	Do not issue Special Flight Permit, unless the NTSB and the FAA have released the aircraft in writing.
	Outstanding Airworthiness Directive prohibits flight?	 Do not issue Special Flight Permit.
	Damage to: <ul style="list-style-type: none"> ● Primary or secondary flight control? ● Fuselage of a pressurized area? ● Stringers, frames, or other structural members? 	Ensure that the Director of Maintenance is briefed on the description of damage. <ul style="list-style-type: none"> ● In or Out of SRM limits? ● Has Manufacturer's Tech Rep been contacted?
	Aircraft currently has an open MEL/CDL:	Evaluate to determine it does not affect the condition of the aircraft for the purpose of the Special Flight Permit,
	It is determined that the current configuration changes the Weight & Balance of the aircraft.	Contact the Director of Quality Assurance and establish a plan.

- ◆ It is possible to embed imperative notes, cautions, and warnings in the procedure table as shown above. We recommend, however, that such symbols be exactly the same as will appear within the normal imperatives, cautions and warnings.
- ◆ There will also be times during the procedure build-out that you will need to add some bulleted considerations to your procedures, the follow table cells will allow the inclusion of "instructions" within a procedural step.

1	This is an example of a "two column" below. You must Select VIEW>BORDERS in the Tool Bar to see the columns below.	
	● Bulleted Text	Bulleted Text

12.1.5 STRIP-DOWN THE PROCEDURE

After the source document is completed and portions are incorporated into the various manuals and chapters, the original procedure should be stripped back down to a smaller procedure (based on very specific criteria).

- ◆ If the operation of the public address system is explained in the equipment chapter of the Flight Attendant Manual, strip that out —.

1	Pick up the public address phone from the aft flight attendant communications panel.
2	Hold the microphone portion of the phone within 1 inch of your mouth.
4	Press and hold the microphone button.
6	When finished, release the microphone button.

- ◆ If the announcement may be memorized, on a card or in the FAM, the wording could drop back to—

1	Make the Ascent announcement.
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12.1.6 DO YOU NEED A CONTROL?

- ◆ Since the Ascent announcement contains the "...keep seat belts fastened..." admonishment, you may determine the failure to make a timely announcement is a "hazard" with a high likelihood of occurring with a medium severity level. That would warrant the insertion of a CONTROL in this procedure - or have a second person responsible for ensuring that the announcement occurs.

Step	"A" Flight Attendant
☒ 1	Confirm that the B Flight Attendant makes timely Ascent announcement...
↓	If reason for failure to make announcement cannot be determined...
2	Make the Ascent announcement.
3	Make the End of Sterile Cockpit announcement.

12.1.7 PROCEDURE TABLE VS. PARAGRAPH TEXT

- The process source documents constructed with JDA assistance will contain the procedures in procedure tables. These tables force the construction of good procedures.
- As a consultant, one cannot always be hard-headed in their wants. The Client does have to be considered. If you find a Client that does not want to have their procedures shown in procedure tables in their manual system, it is relatively easy to convert from the tables to paragraph text.

On the other hand, it is very difficult to convert from paragraph text to procedures tables - because of all the procedural deficiencies normally found in paragraph text.

12.1.7.1 Example 1.

Procedure: On hearing the chime signalling the end of the sterile cockpit procedures during the climb, the "B" flight attendant will make the following three announcements on a sequential basis: *Ascent*, *End of Sterile Cockpit* and *Beverage Service*. (Refer to FAM Chapter 2 for the announcement text)

Control: If for some reason, the B flight attendant does not make these announcements shortly after the signal, the A flight attendant will make at least the Ascent and End of Sterile Cockpit announcements.

12.1.7.2 Example 2

Procedural Steps

1. Wait for the flight deck chime signalling the end of sterile cockpit.
2. At signal, make the *Ascent* announcement
3. Followed by the *End of Sterile Cockpit* announcement
4. Followed by the *Beverage Service* announcement

5. Then begin preparing for the beverage service

- ◆ You can probably discern from the examples that we prefer to number procedural steps whether they are in a procedure table or in the text. But as long as the procedural steps are clearly defined they can be provided in paragraph text.

End of Chapter

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