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STANDARD OPERATING PROCEDURES (SOP)

1 PURPOSE

1.1 Standard Operating Procedures (SOPs) are universally recognized as basic to safe aviation operations. Effective crew coordination and crew performance, two central concepts of crew resource management (CRM), depend upon the crew's having a shared mental model of each task. That mental model, in turn, is founded on SOPs. This AIC presents background, basic concepts, and philosophy in respect to SOPs. It emphasizes that SOPs should be clear, comprehensive, and readily available in the manuals used by flight deck crew members. This AIC is designed to provide advice and recommendations about development, implementation, and updating of SOPs. Many important topics that should be addressed in SOPs are provided in Appendix 1, Standard Operating Procedures Template. Stabilized Approach, characterized by a constant-angle, constant-rate of descent ending near the touchdown point, where the landing maneuver begins, is among the SOPs specifically identified in this AIC, and is described in Appendix 2, Stabilized Approach: Concepts and Terms. These and the other Appendices following them represent a baseline and a starting point. Start-up Air Operator Certificate (AOC) holder and existing AOC holders should refer to the Template in Appendix 1 and to Stabilized Approach in Appendix 2 to this AIC in developing comprehensive SOPs for use in training programs and in manuals used by their flight deck crew members.

1.2 This AIC outlines the requirement for every Air Operator Certificate holder to develop an SOP, being part of its Operations Manual and to be approved by the Department of Civil Aviation.

2 SCOPE

2.1 Appendix 1, consolidates many topics viewed by operators and to be addressed as SOPs in air operator training programs and in the manuals used by air operator flight deck crew members. This AIC does not list every important SOP topic or dictate exactly how each topic should be addressed by an AOC holder. Instead this AIC offers a baseline of topics, to be used as a reference. In practice, each AOC holder's manuals and training programs are unique. Certain topics that do not apply to the operations should be indicated as "not applicable", and, on the other hand, could add other topics not shown in the template when they do apply. This AIC contains guidance intended for use primarily by Air Operators Certificate holder authorized to conduct operations in accordance with MCAR.

3 BACKGROUND

3.1 For many years the International Civil Aviation Organization (ICAO) has identified deficiencies in standard operating procedures as contributing causal factors in aviation accidents. Among the most commonly cited deficiencies involving flight crews has been their non-compliance with established procedures, another has been the nonexistence of established procedures in some manuals used by flight crews.

3.2 The ICAO has recognized the importance of SOPs for safe flight operations. Recent amendments to ICAO Annex 6 and PANS OPS Document 8168, Vol. 1, establish that each Member State shall require that SOP's for each phase of flight be contained in the operations manual used by pilots.

3.3 Many Aviation Safety Organizations have concluded that Air Operators perform with higher levels of safety when they establish and adhere to adequate SOPs.

3.4 A study of CFIT accidents found almost 50 percent of the 107 CFIT interventions identified by an analysis team related to the flight crew's failure to adhere to SOPs or the AOC holder's failure to establish adequate SOP's.

4 THE MISSION OF SOPS

4.1 To achieve consistently safe flight operations through adherence to SOP's that are clear, comprehensive, and readily available to flight crew members.

5 APPLYING THE SOPS TEMPLATE AND OTHER APPENDICES

5.1 Generally, each SOP topic identified in the template (Appendix 1) is important and should be addressed in some manner by the AOC holder, if applicable. Stabilized Approach (Appendix 2) is a particularly important SOP. Other important SOPs, such as those associated with special operating authority or with new technology, are not shown in the template, but should be addressed as well, when applicable. Because each holder's operations are unique, developing the specific manner in which SOPs are addressed is the task of the AOC holder. Topics expanded and illustrated in the Appendices are for example only and represent renditions of SOPs known to be effective. No requirement is implied or intended to change existing SOPs based solely on these examples. An SOP topic shown in the Appendices may be addressed in detail, including test and diagrams, or in very simple terms.

6 PURPOSE

6.1 Many experts agree that implementation of any procedure as an SOP is most effective if:

- a. The procedure is appropriate to the situation.
- b. The procedure is practical to use.
- c. Crew members understand the reasons for the procedure.
- d. Pilot Flying (PF), Pilot Not Flying (PNF), and Flight Engineer duties are clearly delineated.
- e. Effective training is conducted.
- f. The attitudes shown by instructors, check pilots, and managers all reinforce the needs for the procedure

6.2 If all elements (above) are not consistently implemented, flight crews too easily become participants in an undesirable double standard condoned by instructors, check pilots, and managers. Flight crews may end up doing things one way to satisfy training requirements and check rides, but doing them another way in "real life" during line operations. When a double standard does appear in this way, it should be considered a red flag that a published SOP may not be practical or effective for some reason. That SOP should be reviewed and perhaps changed.

7 THE IMPORTANCE OF UNDERSTANDING THE REASON FOR AN SOP

7.1 Effective Feedback. When flight crew members understand the underlying reasons for having SOP, they are better prepared and more eager to offer effective feedback for improvements. The AOC holder, in turn, benefits from more competent feedback in revising existing SOPs and in developing new SOPs. Those benefits include safety, efficiency, and employee morale.

7.2 Troubleshooting. When flight crew members understand the underlying reasons for an SOP, they are generally better prepared to handle a related in-flight problem that may not be explicitly or completely addressed in their operating manuals.

8 COLLABORATION FOR EFFECTIVE SOPS

8.1 In general, effective SOPs are the product of healthy collaboration among managers and flight operations people, including flight crews. A safety culture promoting continuous feedback from flight crews and others, and continuous revision by the collaborators distinguishes effective SOPs at air operators of all sizes and ages.

8.2 New operators, operators adding a new aircraft fleet, or operators retiring one aircraft fleet for another must be especially diligent in developing SOPs. Collaborators with applicable experience may be more difficult to bring together in those instances

8.3 For a startup AOC holder, this AIC and its Appendices should be especially valuable tools in developing SOPs. The developers should pay close attention to the approved Airplane Flight Manual (AFM), to AFM revisions and operations bulletins issued by the manufacturer. Desirable partners in the collaboration would certainly include representatives of the airplane manufacturer, pilots having previous experience with the airplane or with the kind of operations planned by the operator, and representatives from the authority, including the principal operations inspector (POI) and members of the Management Team. It is especially important for a new operator to maintain a periodic review process that includes line flight crews. Together, managers and flight crews are able to review the effectiveness of SOPs and to reach valid conclusion for revisions. The review process will be meaningful and effective when managers promote prompt implementation of revisions to SOPs when necessary.

8.4 An existing AOC holder introducing a new airplane fleet should also collaborate using the best resources available, including the AFM and operations bulletins. Experience has shown that representatives of the airplane manufacturer, managers, check pilot, instructors, and line pilots work well together as a team develop effective SOPs. A trial period might be implemented, followed by feedback and revision, in which SOPs are improved. By being part of an iterative process for changes in SOPs, the end user, the flight crew member, is generally inclined to accept the validity of changes and to implement them readily.

8.5 Long-established operators should be careful not to assume too readily that they can operate an airplane recently added to the fleet in the same, standard way as older types or models. Managers, check pilot, and instructors should collaborate using the best resources available, including the AFM and operations bulletins to ensure that SOPs developed or adapted for a new airplane are in fact effective for that aircraft, and are not inappropriate carry overs.

8.6 Safety in commercial aviation continues to depend on good crew performance. Good crew performance, in turn, is founded on standard operating procedures that are clear, comprehensive, and readily available to the flight crew. This AIC provides an SOPs template and many other useful reference in developing SOPs. Development of SOPs is most effective when done by collaboration, using the best resources available in including the end users themselves, the flight crews. Once developed, effective SOPs should be continually reviewed and renewed.

8.7 Any amendment to the SOP should be recorded in the amendment record page so that it could be used to track of latest SOP updates.

8.8 The name of person/authority authorizing the SOP or any amendment should be clearly defined. An example of an approved signatory page of the SOP is as per Appendix 3.

8.9 The list of distribution and control number should be included in the SOP for better control of updates and amendments.

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