

Docket No. SA-542

Exhibit No. 2-H

NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

Operational Factors Group Chairman's Factual Report
Attachment 7 – SWA B737NG Quick Reference Handbook Excerpt
(3 Pages)

Factual Report – Attachment 7
SWA B737NG Quick Reference Handbook Excerpt

OPERATIONAL FACTORS

DCA18MA142

Non-Normal Checklist Operation

Non-normal checklists start with steps to correct the situation. If needed, information for planning the rest of the flight is included. When special items are needed to configure the aircraft for landing, the items are included in the Deferred Items section of the checklist. Flight profiles for some non-normal situations are located in the Maneuvers chapter and show the sequence of configuration changes.

While every attempt is made to supply needed non-normal checklists, it is not possible to develop checklists for all conceivable situations. In some smoke, fire or fumes situations, the Flight Deck Crew may need to move between the Smoke, Fire or Fumes checklist and the Smoke or Fumes Removal checklist. In some multiple failure situations, the Flight Deck Crew may need to combine the elements of more than one checklist. In all situations, the Captain must assess the situation and use good judgment to determine the safest course of action.

It should be noted that, in determining the safest course of action, troubleshooting, i.e., taking steps beyond published non-normal checklist steps, may cause further loss of system function or system failure. Troubleshooting should only be considered when completion of the published non-normal checklist results in an unacceptable situation.

There are some situations where the Flight Deck Crew must land at the nearest suitable airport. Landing at the nearest suitable airport is required when directed by a QRH checklist. In addition, landing at the nearest suitable airport must be accomplished when there is:

- Engine failure

Note: Subsequently restarting the engine does not relieve this requirement for landing at the nearest suitable airport.

- Engine fire
- APU fire that persists
- Wheel well fire
- Cabin smoke/fire that persists
- One main AC power source remaining (i.e., engine or APU)
- One hydraulic system remaining (the standby system is considered a hydraulic system)
- **Any other situation the Captain determines may adversely affect safety if the flight is continued**

It must be stressed that for smoke that continues or a fire that cannot be positively confirmed to be completely extinguished, the earliest possible descent, landing, and evacuation must be done.

B737NG Quick Reference Handbook

The following terms are defined for clarity to support the Captain's decision making:

- **Nearest Airport** - Nearest airport in point of time. Two airports of different distances may be considered equal airports if a normal descent requires the same amount of time to arrive at either airport. If persistent smoke, fire or other potentially catastrophic situation is encountered, an emergency descent may be appropriate, in which case the closer airport may be the better choice.
- **Suitable Airport** - The most suitable airport to handle the non-normal situation. Several factors should be evaluated to determine airport suitability. Dispatch can be a valuable source of information in determining airport assets and operational status of those assets. The following are a few (but not necessarily all) factors that should be evaluated to determine the suitability of an airport:
 - **Emergency Response:**
 - Are medical/crash/fire/rescue assets available at the airport?
 - Are they operational and manned (late at night or holidays)?
 - Are they required?
 - **Airport Facilities:**
 - Are the appropriate nav aids and approaches available and operational for the current weather?
 - Is the runway of sufficient length to allow for a safe landing based on the non-normal situation?
 - If the Passengers must be deplaned (other than an emergency evacuation), does the airport have jetways or airstairs available? Does the airport have facilities to accommodate the Passengers in extreme or inclement weather so they do not have to remain onboard?
 - **Weather:**
 - Will the current weather conditions allow a safe approach and landing?
 - Will the non-normal situation, remaining aircraft systems and Flight Deck Crew workload and situational awareness allow a safe approach and landing?
 - Are the current weather conditions stable or deteriorating?
 - Are there significant crosswinds that may adversely affect the landing based on the non-normal situation?
 - **On-line versus Off-line Airport:**
 - All factors being equal, landing at an on-line airport may be desirable.
 - Discounting important factors just to choose an on-line airport over an off-line airport or to enhance Passenger convenience is not appropriate.
 - **Immediate Landing** - An immediate landing implies immediate diversion to a runway. Anytime a smoke, fire or fumes situation becomes uncontrollable, an immediate landing should be considered. In severe situations, Flight Deck Crews should consider an otherwise unsuitable runway, an off-airport landing or a ditching.

Checklists directing an engine shutdown must be evaluated by the Captain to determine whether an actual shutdown or operation at reduced thrust is the safest course of action. Consideration must be given to the probable effects of running the engine at reduced thrust.

There are no non-normal checklists for the loss of an engine indication or automatic display of the secondary engine indications. Continue normal engine operation unless a limit is exceeded.