



CREW RESOURCE MANAGEMENT

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CREW RESOURCE MANAGEMENT (CRM)

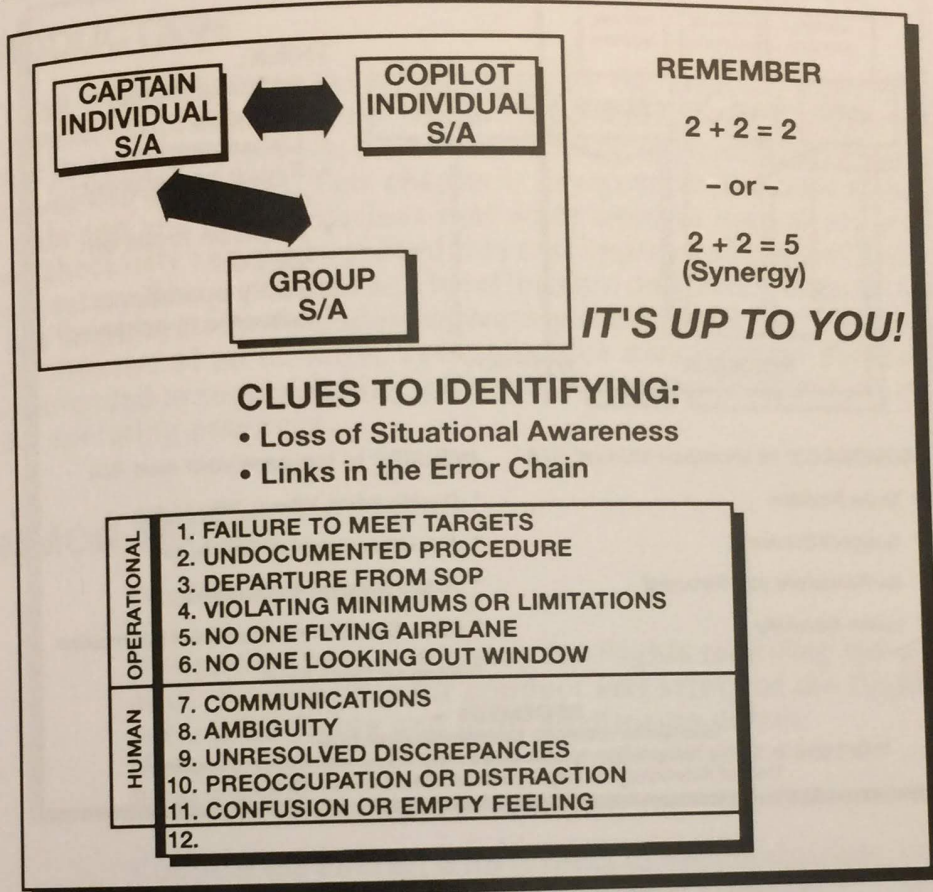


Figure CRM-1. Situational Awareness in the Cockpit

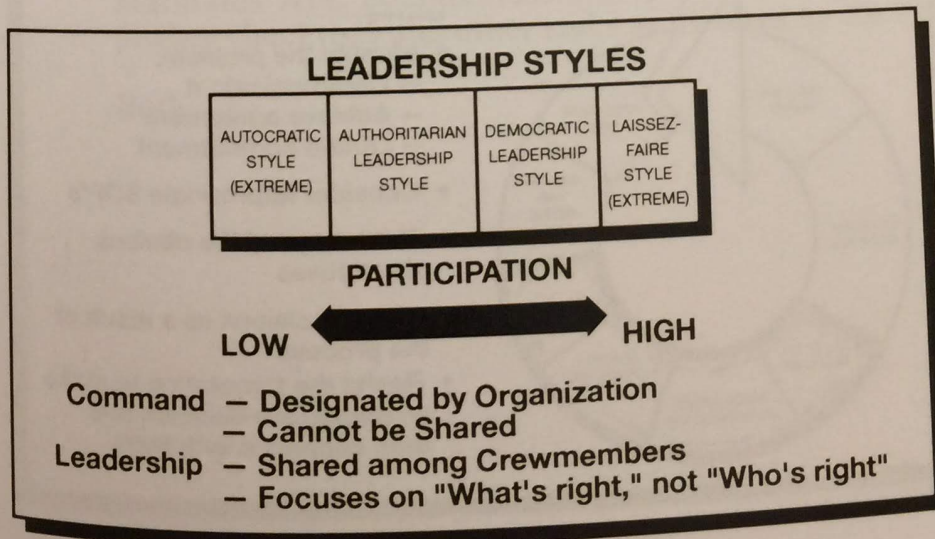


Figure CRM-2. Command and Leadership

CREW RESOURCE MANAGEMENT

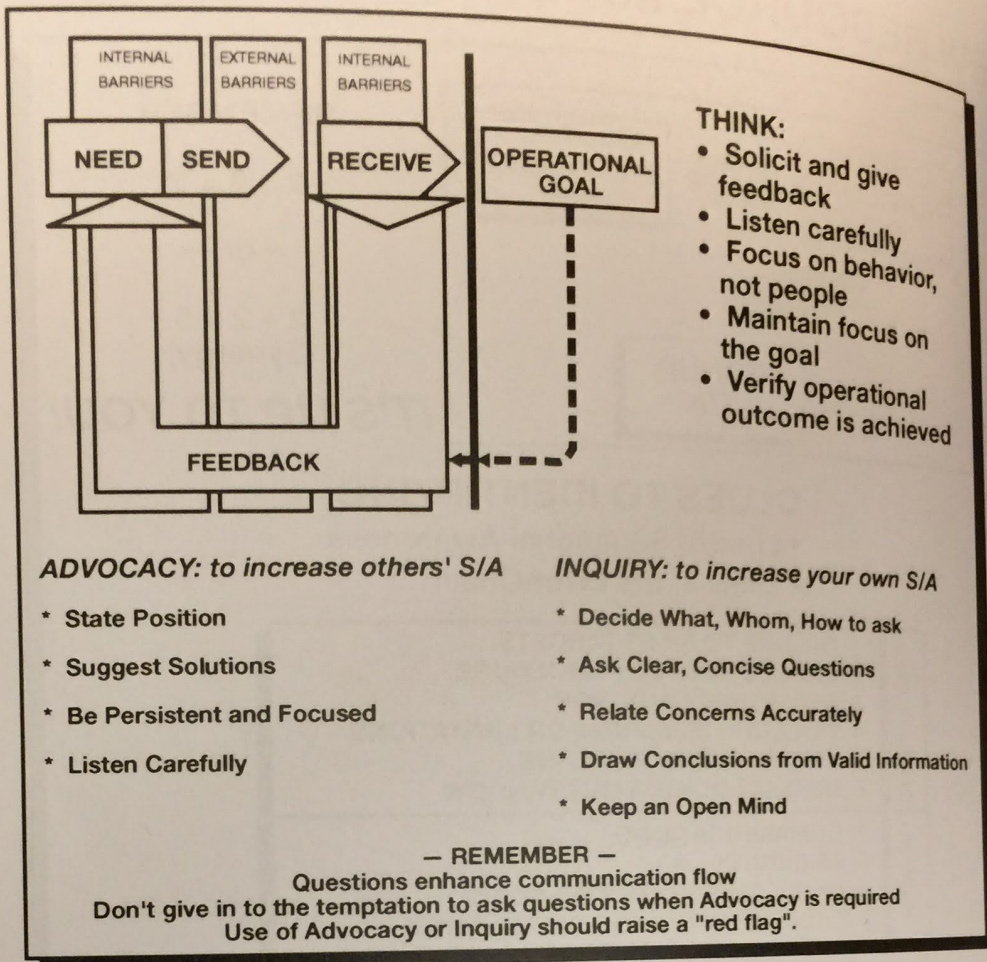


Figure CRM-3. Communication Process

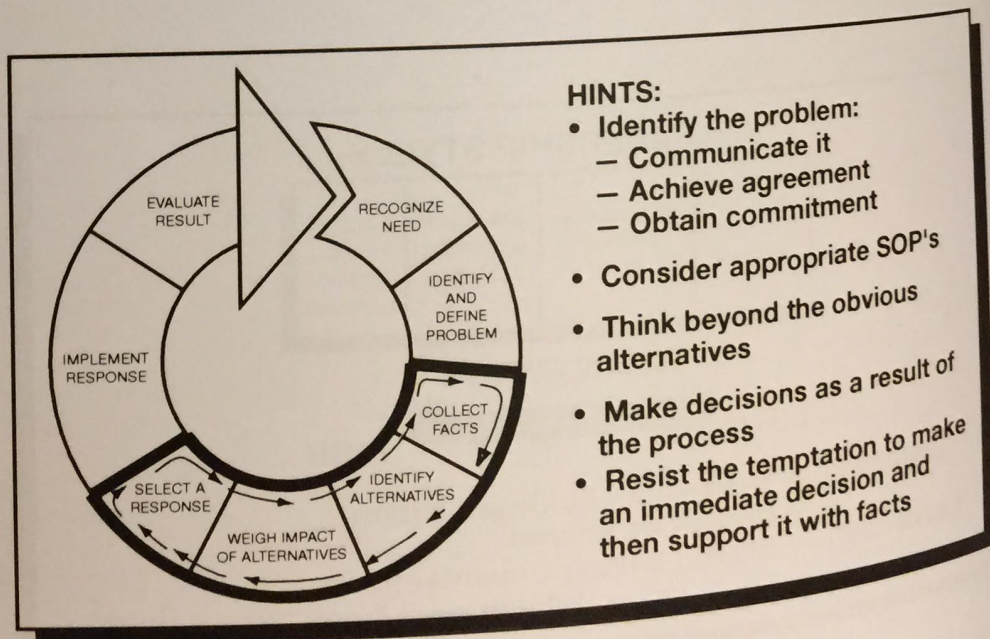


Figure CRM-4. Decision Making Process



CREW CONCEPT BRIEFING GUIDE

INTRODUCTION

To a large extent the success of any aircrew depends on how effectively crewmembers coordinate their actions using standardized and approved procedures. In other chapters you have been exposed to standardized maneuvers, procedures and checklists. This chapter is designed to illustrate standard aircrew calls and briefing guidelines that when used in logical sequence with aircrew checklists and flight procedures can improve aircrew efficiency and enhance safety. These callouts and briefings are only recommendations to be used in a larger system of standard operating procedures that when combined become the core of an effective crew resource management program. They are not intended to supersede any individual company SOP, but are examples of good operating practices.

COMMON TERMS

PIC Pilot in Command

Designated by the company for flights requiring more than one pilot. Responsible for conduct and safety of the flight. Designates pilot flying and pilot monitoring duties.

PF Pilot Flying

Controls the aircraft with respect to assigned airway, course, altitude, airspeed, etc., during normal and emergency conditions. Accomplishes other tasks as directed by the PIC.

PM Pilot Monitoring

Maintains ATC communications, copies clearances, accomplishes checklists and other tasks as directed by the PIC.

B Both

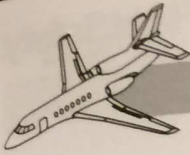


PRETAKEOFF BRIEFING (IFR/VFR)

NOTE

The following briefing is to be completed during item 1 of the Pretakeoff checklist. The pilot flying will accomplish the briefing.

1. Review the ATC clearance and departure procedure (route and altitude type of takeoff, significant terrain features, etc.).
2. Review those items that are not standard procedure to include deferred or MEL items (if applicable).
3. Review required callouts, unless standard calls have been agreed upon, in which case a request for "Standard Callouts" may be used.
4. Review the procedures to be used in case of an emergency on departure.
5. As a final item, ask if there are any questions.



CREW COORDINATION DURING THE APPROACH SEQUENCE

NOTE

The following crew coordination approach sequence should be completed as early as possible, prior to initiating an IFR approach. ”

PF

Requests the pilot monitoring to obtain destination weather. (Transfer of communication duties to the pilot flying may facilitate this task.)

Requests the pilot monitoring to perform the approach setup.

Transfers control of the aircraft to the pilot monitoring, advising, “You have control, heading _____, altitude _____” and special instructions. (Communications duties should be transferred back to the pilot monitoring at this point.)

The pilot who will fly the approach will review, then brief the approach procedure.

Advises, “I have control, heading _____, altitude _____.”

PNF

Advises the pilot of current destination weather, approach in use, and special information pertinent to the destination.

Accomplishes the approach setup and advises of frequency tuned, identified and course set.

Responds, “I have control, heading _____, altitude _____.”

Confirms “You have control, heading _____, altitude _____.”

NOTE

The above sequence should be completed prior to the FAF.



ALTITUDE CALLOUTS

PNF

ENROUTE

1000 Feet Prior to Level Off

State altitude leaving and assigned level off altitude

“200 above/below”

APPROACH – PRECISION

At 1000 feet above minimums

“1000 feet above”

At 500 feet above minimums

“500 feet above minimums”

At 100 feet above minimums

“100 feet above”

At decision height (DH)

“Decision Height, approach lights at (clock position)”

or

“Decision Height, runway at (clock position)”

or

“Decision Height, runway not in sight”

PF

1000 Feet Prior to Level Off

“CHECKED”

“LEVELING”

At 1000 feet above minimums

“DH _____”

At 500 feet above minimums

“NO FLAGS”

At 100 feet above minimums

“100 feet above”

At decision height (DH)

“CONTINUING OR LANDING”

“CONTINUING OR LANDING”

“MISSED APPROACH”

APPROACH
NONPRECISION

At 1000

“1000

At 500

“500

At 100

“100

At minimums

At or prior to

approach

“Approach

“Runway

“Runway



PNF

**APPROACH –
NONPRECISION**

At 1000 feet above MDA

“1000 feet above.”

At 500 feet above MDA

“500 feet above.”

At 100 feet above MDA

“100 feet above.”

**At minimum descent altitude
(MDA)**

“MDA”

**At or prior to the missed
approach point (MAP)**

“Approach lights at (clock
position)”

“Runway at (clock position)”

“Runway not in sight”

PF

At 1000 feet above MDA

“MDA _____”

At 500 feet above MDA

“NO FLAGS”

**At minimum descent altitude
(MDA)**

“MAINTAINING MDA”

**At or Prior to the missed
approach point (MAP)**

“CONTINUING”

OR

“LANDING”

“CONTINUING”

OR

“LANDING”

“MISSED
APPROACH”

**CREW RESOURCE
MANAGEMENT**



PNF

**SIGNIFICANT DEVIATION
CALLOUTS**

IAS ± 10 KIAS

“V_{REF} ± _____”

**Heading ± 10° enroute, 5° on
approach**

“Heading _____ degrees
left/right”

**Altitude ± 100 feet enroute, +
50/-0 feet on final approach**

“Altitude _____ high/low”

CDI left or right one dot

“Left/right of course _____ dot”

RMI course left or right ± 5°

“Left/right of course ____
degrees”

**Vertical descent speed greater
than 1000 fpm on final
approach**

“Sink rate _____”

Bank in excess of 30°

“Bank _____ degrees”

PF

IAS ± KIAS

“CORRECTING TO _____”

**Heading ± 10° enroute, 5° on
approach**

“CORRECTING TO _____”

**Altitude ± 100 feet enroute, +
50/-0 feet on final approach**

“CORRECTING TO _____”

CDI left or right one dot

“CORRECTING”

RMI course left or right ± 5°

“CORRECTING”

**Vertical descent speed greater
than 1000 fpm on final
approach**

“CORRECTING”

Bank in excess of 30°

“CORRECTING”

**CREW RESOURCE
MANAGEMENT**

PRECAUTION
Parking
Fuel
Snow
OPERATION
Snow
Preflight
APU
Eng
Batt
PREHEAT
Gro
Pre
STARTUP
Ef
Sp
FLIGHT
TAXI
TAKEOFF
WATER
SLUSH
F
CROSS
(TAK
DIRE
GRO