ORDERS: 8400.10

APPENDIX: 4

BULLETIN TYPE: Flight Standards Information Bulletin for
                        Air Transportation (FSAT)

BULLETIN NUMBER: FSAT 01-12

BULLETIN TITLE: Approach and Landing Accident Reduction
                        (ALAR): Recommended Flightcrew Training

EFFECTIVE DATE: 10/31/01

TRACKING: NTSB Safety Recommendations A-00-93, A-00-94,
                        and A-00-99

APPLICABILITY: This bulletin applies to the operations of
                        transport category airplanes under parts 121
                        and 135.

**NOTE: THIS BULLETIN REQUIRES PTRS INPUT BY PRINCIPAL OPERATIONS
INSPECTORS – SEE PARAGRAPH 5.**
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1. PURPOSE. More than half of all transport category airplane
accidents occur during approach and landing. This bulletin
promotes flightcrew training to reduce approach and landing
accidents, using new training materials developed specifically
for that purpose.

2. BACKGROUND.

   A. Definition. The term *approach and landing accidents*
applies to accidents occurring during a visual approach, during
an instrument approach after passing the intermediate approach
fix (IAF), or during the landing maneuver. This term also
applies to accidents occurring when circling or when beginning a
missed approach procedure.

   B. New Training Materials. The Commercial Aviation Safety
Team (CAST), of which the FAA is a member, identified through
accident analysis that Approach and Landing Accident Reduction
(ALAR) is one initiative with a particularly high potential for
safety gains through effective flightcrew training. CAST member
working groups developed training materials targeting ALAR. The
efforts of those groups resulted in effective training materials
now available to the public.

C.   A Generic ALAR Training Tool.

    (1)   Acting apart from CAST, the National Transportation
Safety Board (NTSB) issued a number of interrelated safety
recommendations. They recommended "a joint government-industry
task force to develop ... a pilot training tool" to advance ALAR.
Such a training tool would address at least the following sub-
topics:

* Stabilized approach
* Hazards during landings
* Orientation toward a pro-active go-around

    (2)   In fact, not one but three joint task forces convened,
each composed of representatives of manufacturers, operators,
pilot labor organizations, and the FAA. Each task force
developed a training tool with its own focus and style. Taken
together, these three training tools cover the specific topics
named in NTSB recommendations A-00-93, A-00-94, and A-00-99, and
many other topics. These tools are:

        (a)   FAA Advisory Circular (AC) 120-71. Developed by a
joint task force headed by the FAA, under CAST.

        (b)   ATA ALAR Training Guide. Developed by a joint task
force headed by the Air Transport Association (ATA), under CAST.

        (c)   FSF ALAR Toolkit. Developed by a joint task force
headed by the Flight Safety Foundation (FSF).

    D.   Specialized Training in Landing DC-10 and MD-11 Airplanes.
The NTSB recommended that operators of the DC-10 and MD-11
provide their pilots with information and training regarding the
ground spoiler knockdown feature and its effects on landing. The
Boeing Company has responded by issuing supplementary material
addressing those topics in the form of a temporary revision to
the DC-10, MD-10, and MD-11 flightcrew operating manuals (FCOM)
for those airplanes.
3. ACTION. Principal Operations Inspectors (POI) should inform
the Director of Safety (part 121 operator) or the Director of
Operations (part 135 operator) of each operator of transport
category airplanes for which they are responsible of the
existence and availability of the following training materials
and should recommend their use in flightcrew training.

    A.   FAA AC 120-71, Standard Operating Procedures for
Flightdeck Crew Members. AC 120-71 emphasizes that safe
operations are founded upon clear, comprehensive written standard
operating procedures (SOP) readily available in the manuals used

by flightdeck crew members. The value of those manuals, in turn, depends upon continual revisions and the inclusion of manufacturers' safety recommendations. AC 120-71 incorporates an SOP template as Appendix 1, and detailed guidance regarding Stabilized Approach as Appendix 2. Stabilized approach is one of the key features of safe approaches and landings. (See http://www.faa.gov/avr/afs/acs/ac-idx.htm)

   B.   ATA ALAR Training Guide. CAST member organizations, including the FAA and ATA, unanimously recommended the use of this training guide. Appendix 1 is a copy of the contents of the guide. (Pending posting at a public website.)

   C.   FSF ALAR Toolkit. The FSF-led task force distributed the copyrighted ALAR Toolkit to all FSF members, major airplane manufacturers, and other manufacturers along with a strong recommendation from CAST that the ALAR Toolkit be used in connection with the other training materials mentioned in this bulletin. The FSF clearly expressed its explicit permission for manufacturers to distribute the ALAR Toolkit to each of its customers for implementation in the customers' flightcrew training programs. The public may also buy the ALAR Toolkit. (See http://www.flightsafety.org/cfit.html)

> **SPECIAL NOTE: Proactive Go-Around Policy. The CAST and the NTSB found that the unwillingness of pilots to execute a go-around and missed approach when necessary was the cause, at least in part, of some approach and landing accidents. This unwillingness may stem from direct or indirect pressures to sacrifice safety in favor of other considerations, such as schedules or costs. The FAA, ATA, and FSF training materials**
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> **(paragraphs A, B, and C, respectively) all stress the importance of a corporate safety culture promoting a proactive go-around policy.**

   D.   Boeing FCOM Temporary Revision.

   (1)   The Boeing Company has developed special supplementary guidance material for DC-10, MD-10 and MD-11 airplanes. This is:

   "Pilots must be aware that if the number 2 engine throttle is not idle at main gear wheel spinup, it is possible that immediately after AGS deployment the ground spoilers will retract. If this occurs, ground spoilers must be manually extended."

(2)   Boeing transmitted the above supplementary guidance to the operators of those airplanes as a temporary revision (pending a permanent revision) for inclusion in their copies of the Boeing FCOM. It is strongly recommended that the supplementary guidance be reflected in the operators' own flight manuals and flightcrew training programs for the DC-10, MD-10, and MD-11 airplanes, as appropriate. Appendix 2 is an example of that supplementary guidance.

4.   PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) INPUT. POIs will make a PTRS entry for each of their operators to record the actions directed by this bulletin,. POIs will follow the procedures as outlined in HBAT 00-13, Program Tracking and Reporting Subsystem (PTRS) Documentation of Action Required by Flight Standards Bulletins. List this PTRS entry as Activity Code Number 1381; the "National Use" field entry should be "FSAT0112." POIs should use the Comments section to record any comments reflecting interaction with an operator.

5.   INQUIRIES. AFS-210 developed this bulletin. Direct any questions concerning this bulletin to AFS-210 at (202) 267-3723.

6.   EXPIRATION. This bulletin will remain in effect until further notice.

/s/ Matthew Schack,
Acting Manager, Air Transportation Division

APPENDIX 1. APPROACH AND LANDING ACCIDENT REDUCTION (ALAR)
TRAINING GUIDE

August, 2001

INTRODUCTION

The following is the product of a special working group convened under the Commercial Aviation Safety Team (CAST) and chaired by the Air Transport Association (ATA) Training Committee. The group applied the data-driven approach adopted by CAST, producing a guide to help trainers develop training targeted specifically at approach and landing accident reduction, or ALAR. Federal Aviation Administration (FAA) inspectors could also use this guide in assessing the effectiveness of the ALAR training offered by operators under their oversight.

The working group identified the topics shown below, and the interventions implied by the questions grouped with each topic, as having significant safety impact with no serious barriers to implementation.

This guide may be used as a checklist. It does not presume to cover all topics relating to ALAR, but it does cover those topics consistently found to be most important. While the ALAR Training Guide itself is non-regulatory, the CAST member organizations have recognized the importance of ALAR training and specifically recommend the use of this guide, together with the other ALAR training materials mentioned in FSAT 01-12.

The ALAR Training Guide offers a common point of reference for the training developer and the FAA inspector. Existing regulations do not specifically name in specifying training and checking requirements. Yet approach and landing accidents remain among the highest-ranked categories of airline fatal accidents. Initial and recurrent training should address ALAR, but flight checks need not require it except as it relates to existing flight check requirements.

1. Human Factors, including Crew Resource Management (CRM) and Threat & Error Management.

    A. Is there a program to train all new-hire pilots in these subjects?

    B. Does the program address ALAR events and prevention strategies as a part of new-hire (initial) training?

    C. Do new Captains receive focused training in these subject areas to enhance their effectiveness as PICs, and does training include information addressing ALAR issues and prevention strategies?

    D. Do all crewmembers and associated operational support staff (dispatchers, safety specialists, etc.) receive periodic training on these same subjects?

2. Basic Airmanship.

    A. Are basic "stick and rudder" skills taught?

    B. Is there a definite SOP (standard operating procedure) for transferring aircraft control?

    C. Is there specific advanced aircraft/swept-wing and fan jet training (e.g., Mach buffet, idle to full power lag times) for newly-hired pilots?

3. Advanced Aircraft Maneuvering.

    A. Is there training in mountain flying and high altitude airports?

    B. Is there training in upset and unusual attitude recoveries?

    C. Is there training in steep turns and high angle of attack (AOA) maneuvers and awareness?

4. Non-Normal Aircraft Conditions.

    A. Are crews trained in typical aircraft emergencies (e.g., malfunctions that the aircraft type has experienced and noted through FOQA/ASAP or other trend analysis)?

    B. Are crews trained or evaluated in line-oriented scenarios (e.g., real time and data-driven events)?

    C. Are crews taught to use all the resources at hand to safely contain an emergency?

5. Approach Procedures and Briefings.

A. Is there an SOP for approach briefings that includes items such as NOTAMs, weather, inoperative equipment, terrain, missed approach procedures, and special airport considerations?

B. Are crews trained in flying constant-angle approach profiles (e.g., VNAV versus "dive and drive"), and expected to use them whenever possible?

C. Does flightcrew training include explicit "go around gates" that, if missed, would require the crew to execute a missed approach (e.g., stabilized approach criteria, landing configurations, and landing checklists complete)?

D. Does the company have a clear "no fault" go around/missed approach policy?