

Flight Technologies and Procedures Division

Special Authorizations Category I & II Approaches

Presented to: New Technology Workshop,
Beijing

By: Gary Powell
 Acting Division Manager, AFS-400

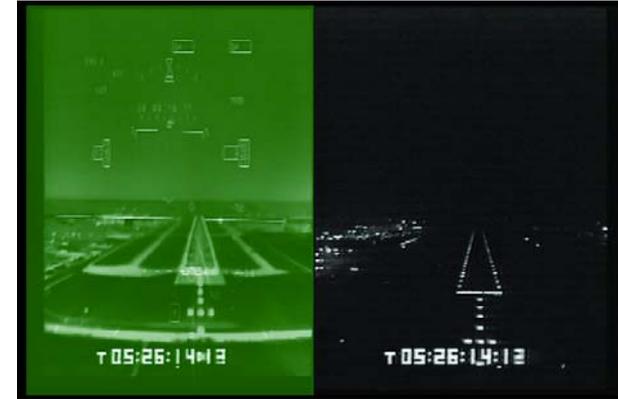
Date: June 6, 2012



Federal Aviation
Administration



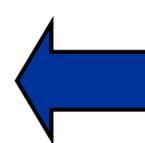
Technology Evolution



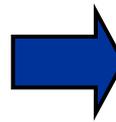
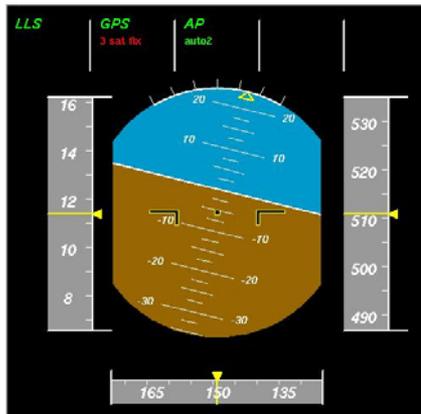
Combined EFVS/SVS

SVS Primary Flight Displays

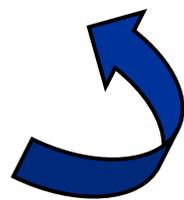
Emerging EFVS Capabilities



Legacy

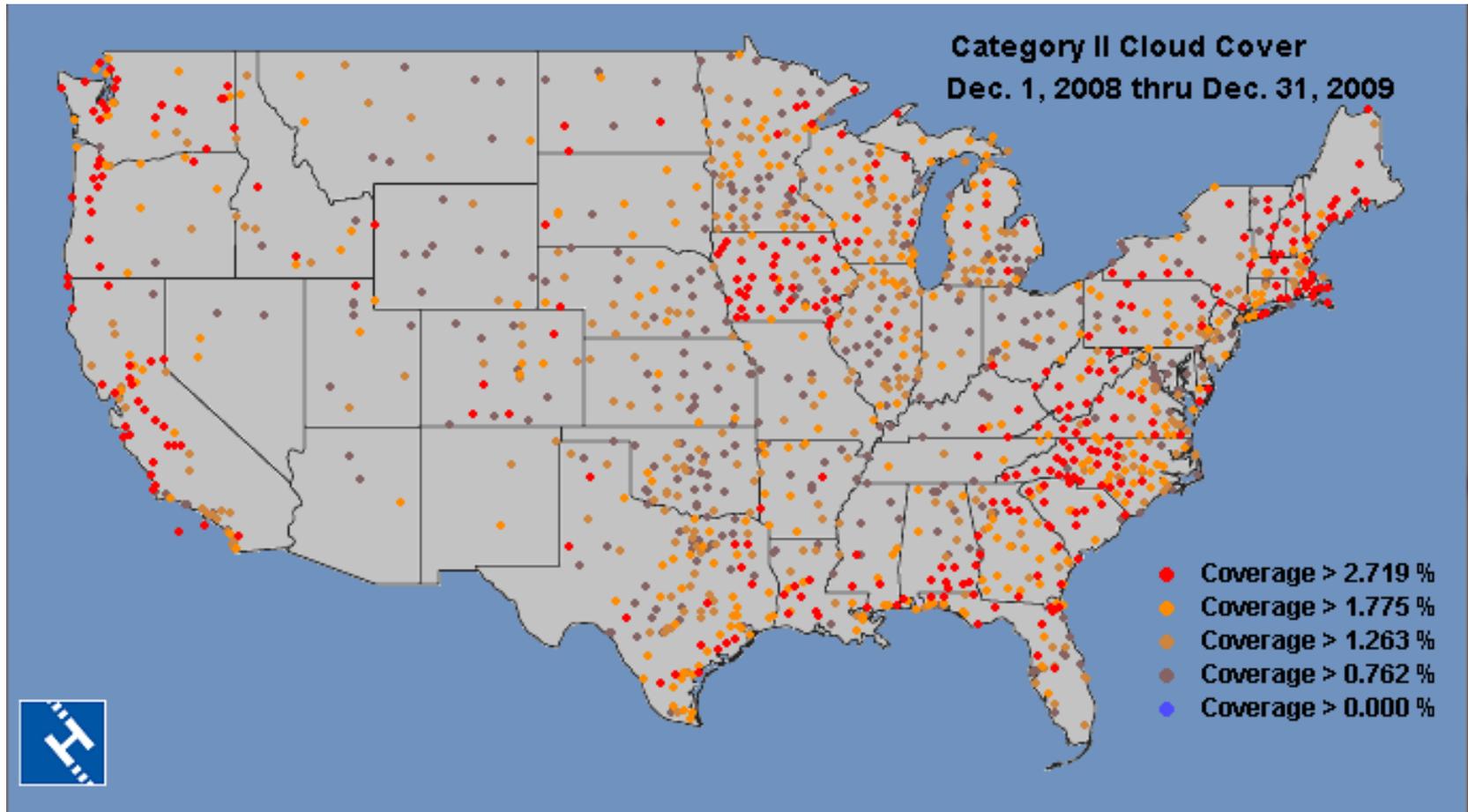


HUD



Category II Conditions

December 1, 2008 – December 31, 2009



Policy



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
National Policy

**ORDER
8400.13D**

Effective Date:
10/22/09

SUBJ: Procedures for the Evaluation and Approval of Facilities for Special Authorization Category I Operations and All Category II and III Operations

FOREWORD

This order provides guidance for all personnel in the authorization of instrument landing system (ILS) ground facilities to support Category I (CAT I) operations to Runway Visual Range (RVR) 1800 and Special Authorization CAT I to RVR 1400, and all Category II (CAT II) and Category III (CAT III) operations (including Special Authorization CAT II).



CAT I 1800 RVR Approach Operations

- **Runways must have or be qualified for CAT I DH of 200 feet or less and visibility minimum of not more than 2400 RVR**
- **Required Ancillary Lighting**
 - SSALR or MALSR or ALSF
 - HIRL
 - TDZE RVR

CAT I 1800 RVR Approach Operations

- **Existing CAT I ILS that did not previously qualify due lack of Center Line (CL) and TDZE lights can be amended to include 1800 RVR**
 - Chart Note: “RVR 1800 Authorized with use of FD or AP or HUD to DA”

1800 RVR Operation Saves

- **Detroit (DTW) March 21, 2008**
 - 2000 RVR for 7.7 hours
 - Winds Required SW Runways
 - One Operator Reported 56 Saves
 - Potential 289 Operation Saves total.
- **Columbus (CMH) Feb. / Mar. 2008 (9 hours):**
 - 96 Saves
- ***If CMH RWY 28 R was CAT II (RVR added)***
 - 123 operations potentially saved

Special Authorization (SA) CAT I

- **150** Decision Height (DH) Radio Altimeter (RA),
1400 RVR CAT I minima
- **Requires:**
 - HIRL and MALSR, SSALR, or ALSF
 - Unrestricted CAT I ILS
 - Use of **HUD to DH**
 - Operational approval required by FAA
- **Will reduce CAT I minimums at
162 CAT II/III runways**
 - 26 Approaches published



Benefit Example: Portland (PDX) 10R SA CAT I

- **PDX 10R**
 - Only PDX CAT III runway
 - Downgraded to CAT I only December 09
 - 7 outages in preceding 6 months
 - SA CAT I published via Notice to Airman (NOTAM)
 - Dec 23-25, 09: ~ 25 hrs RVR between 1200 and 1800
 - Horizon saved 58 arrivals using SA CAT I (3700 Pax)
- **1400 RVR minimums are still available when CAT II/III is not applicable (NA)**
- **SA CAT I critical backup for airports with 1-2 CAT II/III runways**



Special Authorization (SA) CAT II

- TDZL, RCL, and ALSF-2 **not** required
- **Requires:**
 - ILS flight checked to CAT II standards
 - HIRL and MALSR, SSALR, or ALSF
- **Operational approval required by FAA**
 - Chart Note: *Reduced Lighting: Requires specific OpSpec, MSpec, or LOA approval and **autoland or HUD to touchdown.***
- **23 published approaches in U.S.**
 - Providing a critical backup to “single thread” CAT II/III airports



Benefit Example: Boston (BOS) 33L SA CAT II

- **BOS 4R only BOS CAT III runway**
 - Downgraded to CAT I only July 2009
 - 5 outages in preceding 6 months
- **SA CAT II implemented in early 2009 on runway 33L**
 - Numerous saves for approved operators with autoland or HUD to touchdown
 - CAT II weather for much of the July 4 weekend

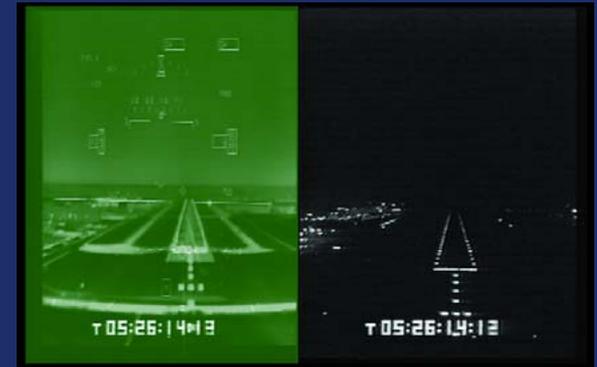
CAT II ILS 1000 RVR Operations

- **Standard CAT II requirements plus chart note:**
 - “RVR 1000 authorized with specific OPSPEC, MSPEC, or LOA approval and use of autoland or HUD to touchdown”
- **International harmonization**
- **Require Surface Movement Guidance Control Systems (SMGCS) in U.S.**



One User's Testimonial

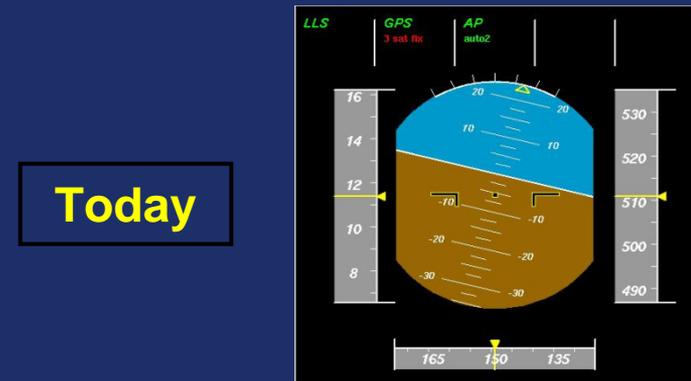
- **The program allows the airlines to get operational credit for the precision landing systems we have in our aircraft, and thereby increase the safety and reliability of our operations, all without additional investment or cost. So for the airlines and our passengers, this program is truly “getting something for nothing.” In combination with the recent reductions and adjustments to takeoff minimums, the changes are probably one of the most significant “no cost” operating enhancements in recent memory.**
 - **Glenn Morse, United Airlines**



**Combined
EFVS/SVS**

**SVS Primary
Flight Displays**

**Emerging EFVS
Capabilities**



Thank you