



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Air Traffic Organization Policy

ORDER
JO 7210.629D

Effective Date:
February 1, 2017

SUBJ: Next Generation Weather Radar (NEXRAD) Weather and Radar Processor (WARP) Selectable Mosaic Generator (SMG) and the process to change an En Route Automation Modernization (ERAM), Micro En Route Automated Radar Tracking System (MEARTS), and Advanced Technological Oceanic Procedures (ATOP) precipitation altitude strata and the corresponding Weather Filter Setting key label

1. Purpose of This Order. This order provides guidance for requesting and implementing precipitation altitude stratum change at the Air Route Traffic Control Center (ARTCC) and Combined Center Radar Approach Control (CERAP) facilities where ERAM, MEARTS, or ATOP are located.

2. Audience. Air Traffic Organization, William J. Hughes Technical Center, Mike Monroney Aeronautical Center, and ARTCCs and CERAPs.

3. Where Can I Find This Order? This order will be available on the MYFAA employee Web site at https://employees.faa.gov/tools_resources/orders_notices/ and on the air traffic publications Web site at http://www.faa.gov/air_traffic/publications.

4. Cancellation. This order cancels Order JO 7210.629C, same subject, effective February 01, 2016. Order JO 7210.629B is canceled when SMG is deployed to the facility.

5. Explanation of Policy Changes. The procedural guidance in this order removes the requirement for fixed Weather Filter Setting key altitudes, i.e. 000-240, 240-600, 330-600, and 000-600, and allows facilities to request and implement new Weather Filter Setting key altitude strata to better align with facility sector altitude strata. WARP precipitation stratification will be configurable in 1000 foot increments. The number of Weather Filter Setting keys remains unchanged at four.

6. Guidance. The following table describes the legacy Weather Filter Setting key stratum and the new WARP SMG products. If the facility does not request a new precipitation altitude stratum per Paragraph 7, then SMG will be deployed to the facility and configured to match the Existing Weather Filter Setting key stratum.

Generalized Sector's Control Altitude Stratum	Existing Weather Filter Setting Key	SMG Altitude Stratum	SMG Effective Range	SMG Latency (seconds)
Low	000-240	Selectable - Selectable	Decreases as ceiling lowers ¹	30-300
High	240-600	Selectable - Selectable	Decreases as ceiling lowers ¹	30-300
Super High	330-600	Selectable - Selectable	Decreases as ceiling lowers ¹	30-300
Composite	000-600	000 - 700	248 nm	30-300

¹ Maximum coverage range is 248 nautical miles. As the altitude ceiling lowers, the range decreases due to radar beam angle and Earth's curvature.

7. Background. The new procedural guidance in this directive is based on the analyses, design, testing, and evaluation of SMG. The legacy WARP Baseline Mosaic Generator (BMG) produces precipitation mosaics that have 5-10 minute latency, limited coverage range, fixed altitude strata, and non-weather echo removal available for only one Weather Filter Setting key. SMG will reduce the latency to 0.5-5 minutes, double the coverage range to 248 nautical miles for all Weather Filter Setting keys, allow precipitation altitude strata to be selectable in 1000 foot increments, and enable non-weather echo removal for all Weather Filter Setting keys. In addition, the controllers will see an improvement to the mosaics' spatial resolution when SMG is deployed. There will be no changes to the number of Weather Filter Setting keys, nor any change to the precipitation intensity color representations. Existing procedure in FAA Order 7110.65, Air Traffic Control, Paragraph 2-6-4 shall still be used to report any anomalies in NEXRAD WARP presentation.

SMG will help mitigate the following air traffic control safety issues and inefficiencies experienced by en route and oceanic controllers using BMG:

- Controller advised a pilot of oncoming weather and the pilot reported there was none because non-weather was displayed on the controller's situation display.
- Controller advised a pilot of oncoming weather and the pilot reported there was none because the controller's displayed precipitation was below the aircraft.
- A pilot requested a deviation around weather that was not displayed on the controller's situation display because the controller's precipitation data was latent or not displayed.

8. Action. An ARTCC or CERAP facility can request a change to one or more of the Weather Filter Setting key altitude strata to more closely match that of the facility's sectors. The precipitation altitude strata floor and ceiling can be defined in 1000 foot increments.

The Weather Filter Setting key label text is a local ERAM, MEARTS or ATOP adaptation that the Program Office Field Manager (POFM) is responsible for changing. SMG configuration is WARP Prime Contractor maintained adaptation which the Weather Systems Operations Center (WSOC) can change with WARP Tech Ops Second Level Engineering Support's authorization. The Weather Filter Setting key label text change and SMG configuration change must be made simultaneously to prevent a mismatch between the precipitation altitude stratification and the Weather Filter Setting key label. The procedures for requesting and implementing a change to precipitation altitude stratification and the corresponding Weather Filter Setting key label are:

- The ARTCC or CERAP Air Traffic Manager (ATM) will make a written email request to the WARP Program Office identifying the:
 - Desired new stratification,
 - Existing Weather Filter Setting key it is to replace, and
 - Desired timeframe for implementation.
- WARP Program Office requests a 30 business day minimum lead-time.
- WARP Program Office will notify the facility's ATM of approval and the ATM will submit an adaptation request to the POFM.
- WARP Program Office will coordinate the approved change with WARP Second Level Engineering Support and the WARP Prime Contractor.
- WARP Second Level Engineering Support will issue a System Support Directive that identifies the new layers and authorizes Harris to configure the new stratification. WARP Second Level Engineering Support will schedule the changes with the WARP Prime Contractor and the

POFM.

- The facility's ATM is responsible for identifying the applicable Weather Filter Setting key to be used for each sector in a local directive and ensuring that controllers working operational positions are appropriately briefed on changes to the Weather Filter Setting keys.

9. Distribution. This order is distributed to the Air Traffic Organization, William J. Hughes Technical Center, Mike Monroney Aeronautical Center, ARTCCs and CERAPs.

10. Safety Risk Management. Please refer to Safety Management Tracking System (SMTS) #00127 to read the full Safety Risk Management Document.

Original signed by Heather Hemdal

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December 20, 2016

Date