



Airlines for America[®]

We Connect the World



Airline Industry Preparations for Solar Cycle 25

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Airlines for America (A4A) Overview

A4A advocates on behalf of its members to shape policies and measures that promote a safe, secure and healthy U.S. airline industry. We work collaboratively with airlines, labor, Congress, the Administration and other groups to improve aviation for the traveling and shipping public.

*The **A4A Meteorology Committee** is a standing committee directed to address issues relating to meteorological effects on airline flight operations, air traffic management and NAS modernization.*

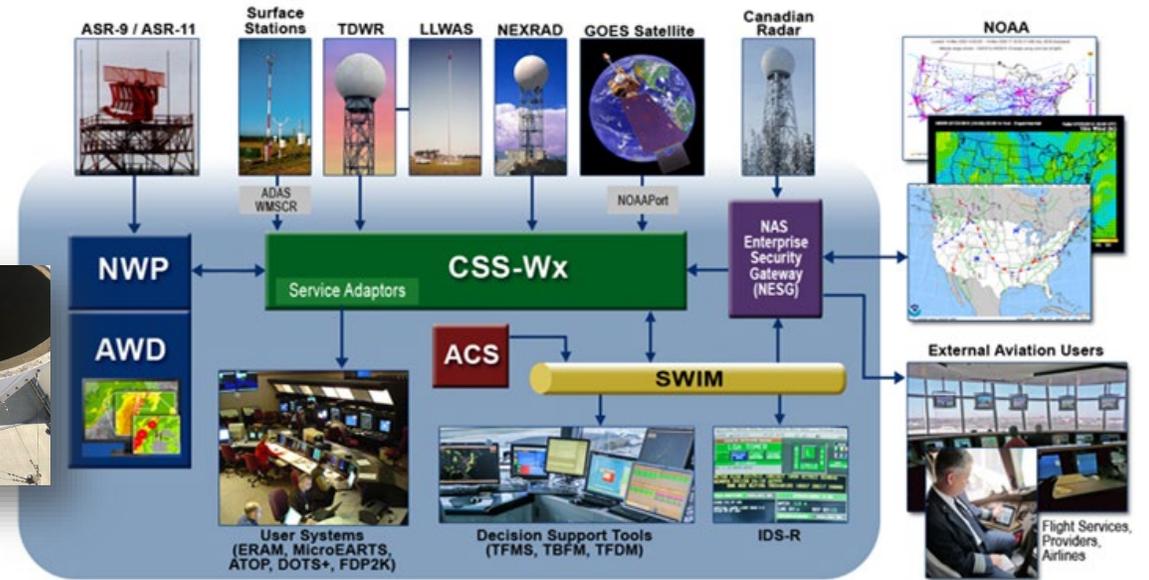
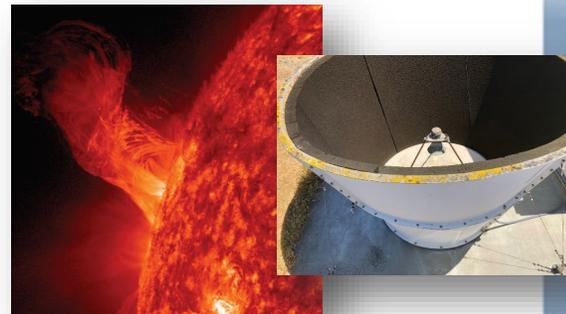
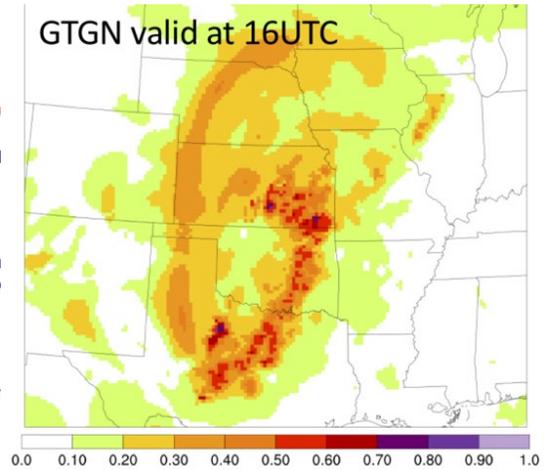


Our priority is to build and sustain collaborative relationships with the NWS and FAA

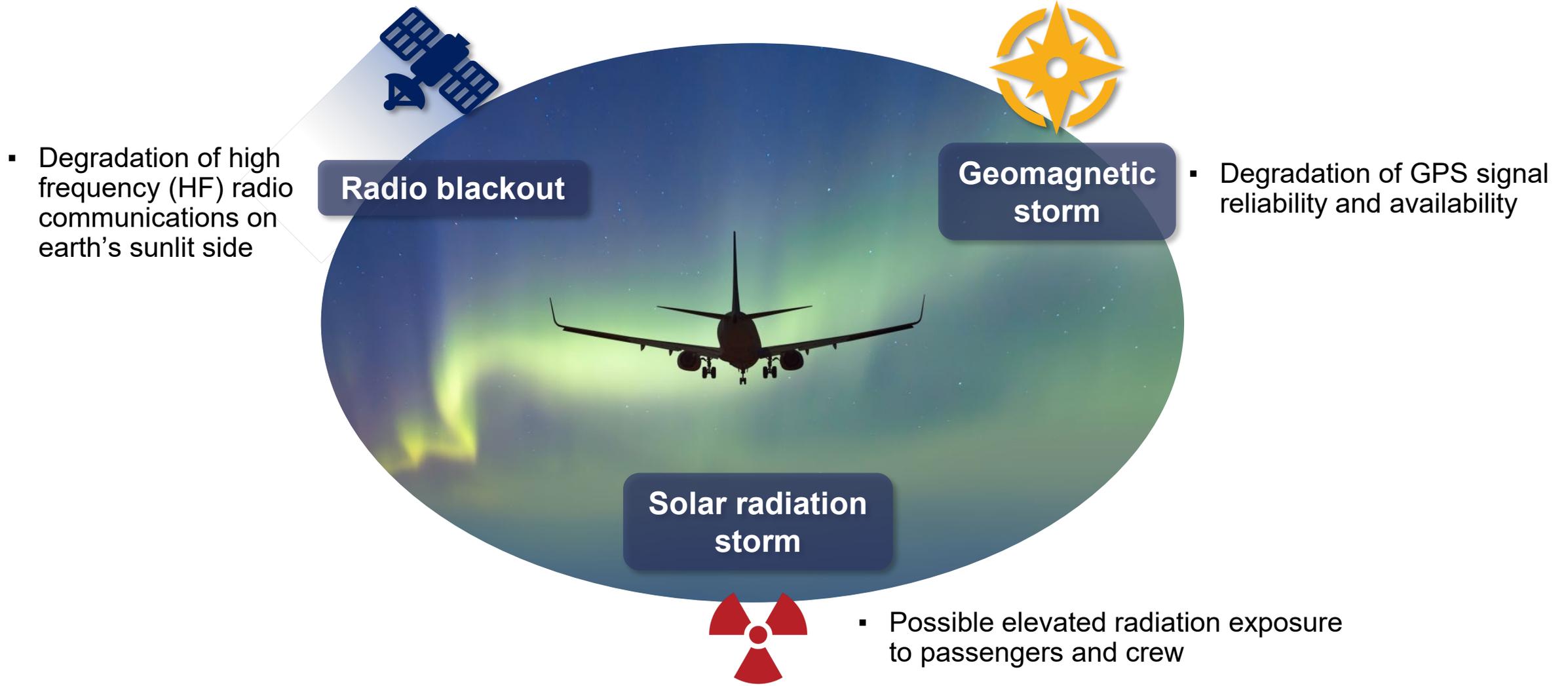
- Mitigate risks of new ICAO Space Weather Advisories
- Improve standardization and verification of TAFs
- Improve the quality, capability and reliability of airport weather observations
- Modernize MET information delivery systems and ATM integration
- Promote effective and timely transition of aviation weather research to operations

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A brief review of space weather impacts to aviation



Airlines use safety management systems to identify and track hazards and risk mitigations

- Vague and outdated standard operating procedures
 - Expand scope to all domestic and international operations
- Lack of familiarity and experience across global aviation community
 - Coming out of very quiet solar minimum
 - Huge generational shift in crewmembers
- How to incorporate new ICAO Space Weather Advisories
 - Potential inconsistency, confusion, overreaction
- Customer sentiment, perception



Solar Radiation Alert Levels

RADIO EFFECT		SOLAR RADIATION		NAVIGATION EFFECT	
R1	Minor HF Impact	S1	No effects	G1	No Effect
R2	Small HF Effect	S2	Dispatcher Review Required	G2	Dispatcher Review Required
R3	Degraded HF	S3		G3	
R4	HF Blackouts	S4		G4	
R5	Complete Blackout	S5		G5	

SWX ADVISORY

DTG: 20161108/0100Z
SWXC: SWPC

ADVISORY NR: 2016/2
NR RPLC: 2016/1
SWX EFFECT: RADIATION MOD
OBS SWX: 08/0100Z HNH HSH E18000 - W18000 ABV FL350
FCST SWX +6 HR: 08/0700Z HNH HSH E18000 - W18000 ABV FL350
FCST SWX +12 HR: 08/1300Z HNH HSH E18000 - W18000 ABV FL350
FCST SWX +18 HR: 08/1900Z HNH HSH E18000 - W18000 ABV FL350
FCST SWX +24 HR: 09/0100Z NO SWX EXP
RMK: RADIATION LVL EXCEEDED 100 PCT OF BACKGROUND LVL AT FL350 AND ABV. THE CURRENT EVENT HAS PEAKED AND LVL SLW RTN TO BACKGROUND LVL. SEE WWW.SPACEWEATHERPROVIDER.WEB
NXT ADVISORY: NO FURTHER ADVISORIES

Mitigating risks through A4A and industry collaboration

- A4A coordinating a scenario-based training & awareness campaign with NOAA SWPC
- A4A regularly engages FAA and NOAA leadership in DC
- Advisory support to IATA and FAA reps to ICAO Met Panel
- Support improvements via ongoing research and ICAO Annex 3 revisions
 - Spatial resolution, defined polygons
 - Incorporate risk-based confidence/uncertainty information
 - Verification and validation measures
 - Graphical, web-based delivery
- Engage Air Navigation Service Providers (ANSPs)
- Partnership with labor union safety representatives



International Civil Aviation Organization

STUDY NOTE

METP-WG/MISD/4-SN/2XZZ
DD/MM/18

MEETING OF THE METEOROLOGY PANEL (METP)
WORKING GROUP ON MET INFORMATION AND SERVICE
DEVELOPMENT (WG-MISD)

FOURTH MEETING

Melbourne 18-22 February 2019

Agenda Item X: Agenda Item Title
X.x: Sub-agenda Item Title

The Inclusion of Confidence information in Space Weather Advisories

(Presented by Graham Rennie IATA)

SUMMARY

The new space weather service became applicable on 08 November 2018. To enhance the decisions made by operators and pilots when managing flying operations in areas where space weather is forecast to be present. IATA requests the space weather global centre(s), develop and include a statement of 'confidence' in the Space Weather Advisory (SWA). This supporting information will assist the pre-tactical and tactical risk assessment process.



Summary

- The safety of crewmembers and customers is our highest priority
- The last major solar radiation storm was over 17 years ago, and we are emerging from one of the quietest solar activity minimums on record
- A thorough risk-based approach is necessary to address procedural gaps, crewmember training and awareness, and new ICAO Space Weather Advisory services
- A4A seeks a collaborative partnership between industry stakeholders and NOAA's world-class Space Weather Prediction Center to minimize potential operational impacts