

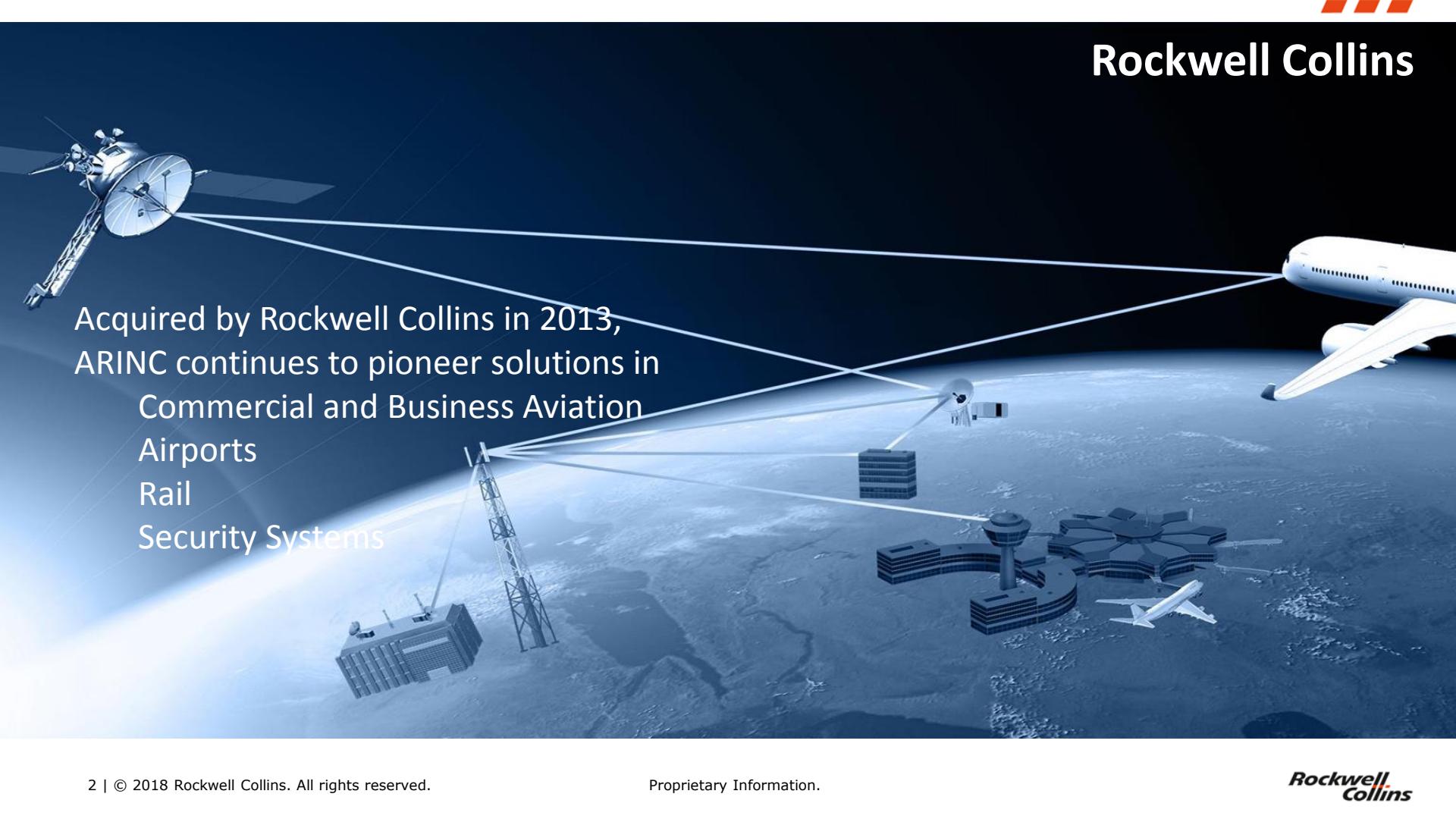
Rockwell Collins IMS

Aviation Voice Services

The Effects of the 10SEP17 Solar Event on HF Voice Comms
Over the Atlantic



Presented by: Anthony Abate



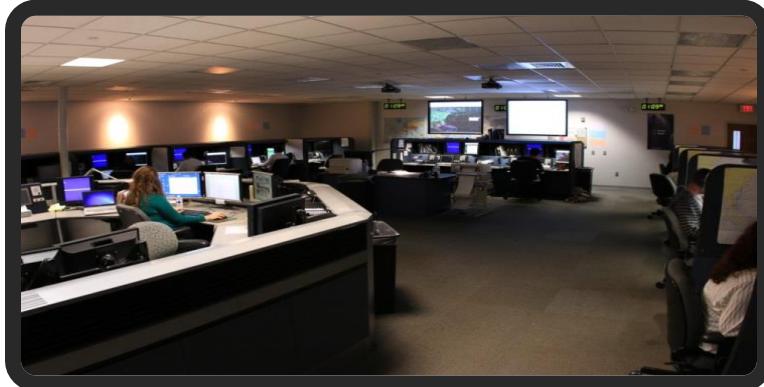
Acquired by Rockwell Collins in 2013,
ARINC continues to pioneer solutions in
Commercial and Business Aviation
Airports
Rail
Security Systems

Rockwell Collins IMS

Aviation Voice Services

The primary mission of Aviation Voice Services is to provide communications to the air transport industry across all media to support Air Traffic Control and Aeronautical Operational Control.

Communications Centers in California and New York provide message relay and phone patch services throughout the western hemisphere.



Air Ground International Radio

Air Traffic Control Communications

150,000 Messages per Month for FAA, Mazatlan & Piarco



SYSTEM REDUNDANCY KEEPS ATC COMMUNICATIONS
OPERATING AT > 99.99%

CLEARANCES ARE DELIVERED WITHIN 3 MINUTES.
REQUESTS & ADVISORIES WITHIN 5 MINUTES



Aviation Voice Services

Services

Message Relay | Phone Patches | Position Reporting | Weather

Media

HF Radio

VHF Radio

SatVoice

Geographic Coverage

Pacific

Atlantic

Coastal Asia

CONUS & Coastal Alaska

Mexico

INMARSAT

South America

Polar Routes

Caribbean

Maritime Canada

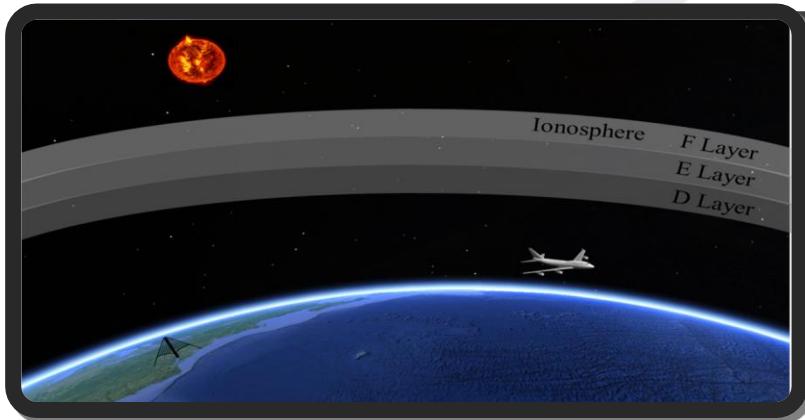
Caribbean

Iridium

Customers

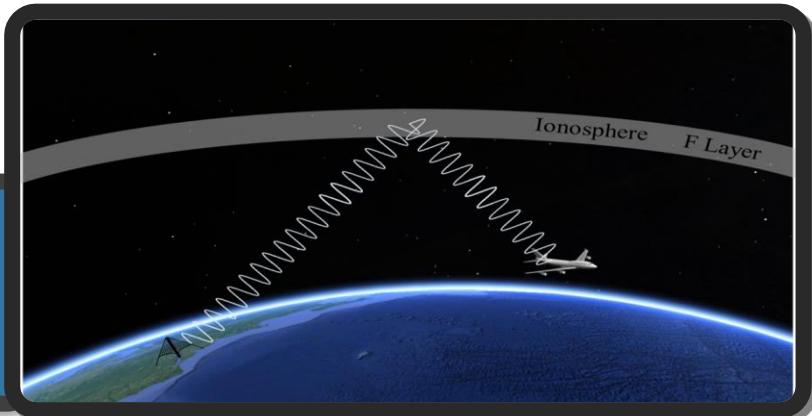
FAA | Airlines | Foreign ANSPs | General Aviation

HF Propagation

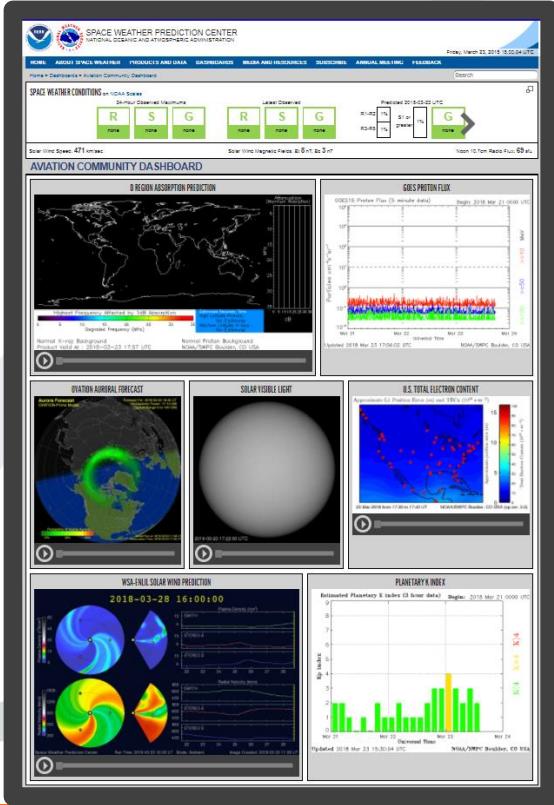


During daylight hours, the sun's energy further charges the ionosphere creating additional layers and worsening absorption, requiring the use of higher frequencies

Selection of the correct frequency for time of day and distance to target ensures successful communications

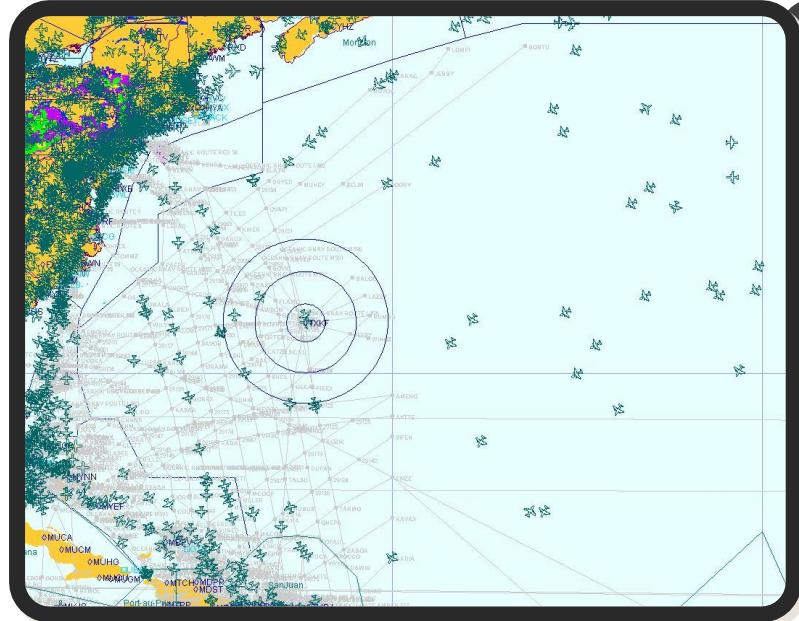


“Follow the Sun”



**SWPC – Aviation Community Dashboard-
The science behind what the Rockwell
Collins Radio Operators experienced “over
the air”.**

Sunday, September 10, 2017



Weekends are historically a busier time for air traffic.

Sunday, September 10, 2017



In the days and weeks before this event, nature dealt the Caribbean islands quite a strong blow with a few major hurricanes, so the air traffic in the Western Atlantic was lighter than normal.

Sunday, September 10, 2017

There were some X ray flares the week prior to September 10th that impacted our voice operation enough that we were operating on the highest end of the aeronautical frequency spectrum. Looking back, this was like the Sun's proverbial "shot across our bow".

NYCXA – HF

	<u>NAT-A</u>		<u>NAT-E</u>		<u>CAR-A</u>		<u>CAR-B</u>		<u>NAT A/E</u>		<u>LDOCF</u>
1	3016 - QA	1	2962 - QE	1	2887 - QH	1	5520 - EN	1	2962 - QE	1	3494 - RP
2	5598 - TA	2	6628 - TE	2	3455 - CS	2	6586 - UJ	2	5520 - EN	2	6640 - UO
3	8906 - VA	3	8825 - VE	3	5550 - TL	3	8918 - VQ	3	8846 - VF	3	8933 - VW
4	11396 - XO	4	11309 - XE	4	6577 - UI	4	11330 - LS	4	11330 - LS	4	11342 - XF
5	13306 - YA	5	13354 - YE	5	8846 - VF	5	13297 - YG	5	11396 - XO	5	13348 - YV
6	17946 - ZA	6	17952 - ZE	6	11396 - XO	6	17907 - ZD	6	13306 - YA	6	17925 - ZH
7	21925 - PZ	7	21964 - PE	7		7	21985 - PU	7	13354 - YE	7	21964 - PN
8		8		8		8		8	17907 - ZD	8	

INTERNATIONAL VHF

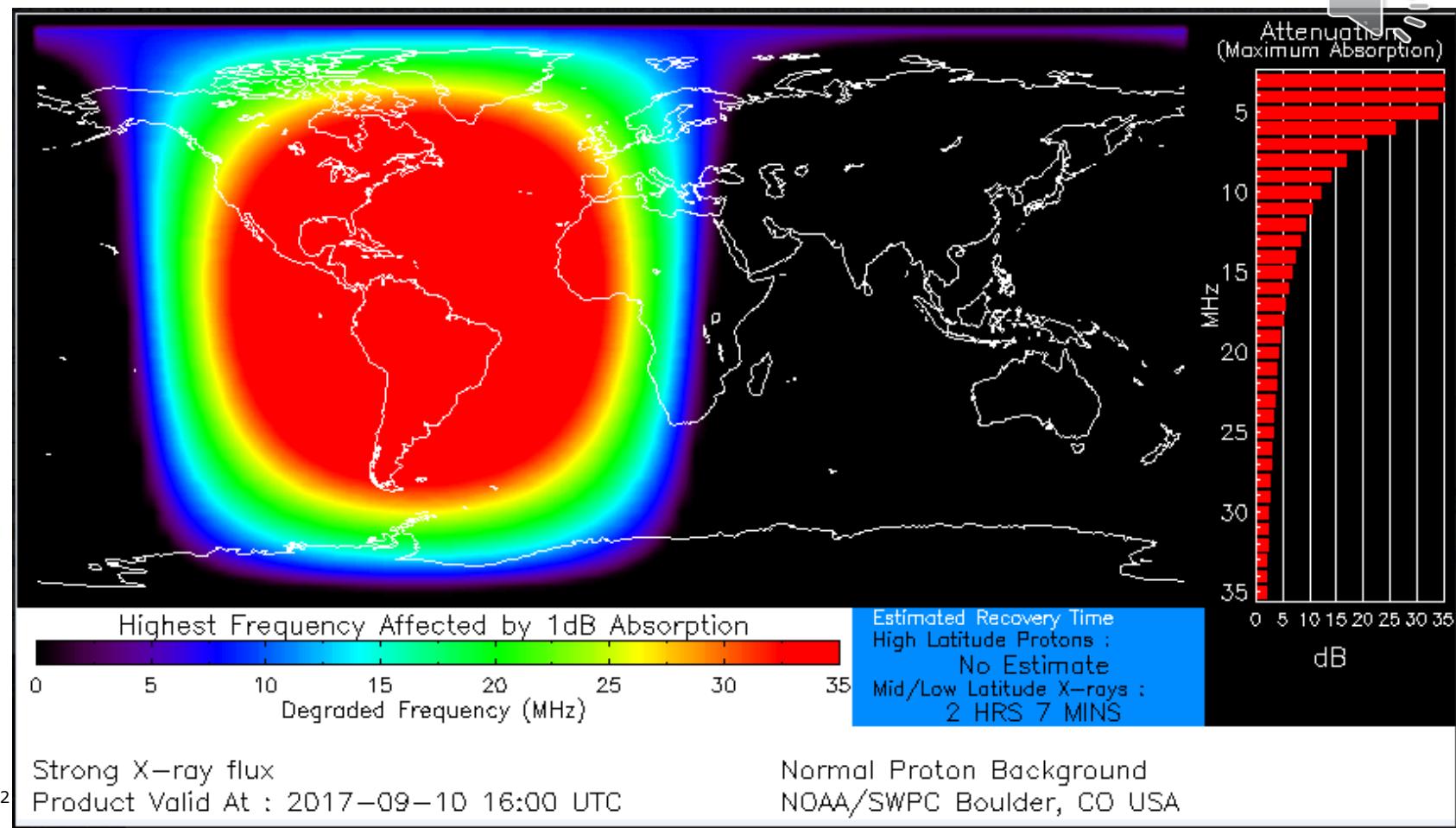
	Bolivia		
	<u>CAR A/B</u>		<u>LDOC</u>
1	3455 - CS	1	3494 - RB
2	5520 - EN	2	6640 - UB
3	5550 - TL	3	8933 - VB
4	6586 - UJ	4	11342 - XB
5	8918 - VQ	5	13348 - YB
6	11396 - XO	6	17925 - ZB
7	13297 - YG	7	21964 - PB
8		8	

Maritime Net	JW/129.90
Gulf Net	KA/130.70
NAT/CAR air-to-air	123.45
NYCXA SATVOICE	ZNY Oceanic SATVOICE
436623 – SP	436695 - MNPS
(631) 244-2492	436696 – WATRS

Sunday, September 10, 2017

Here in NYC,
the NOAA SWPC Aviation
Dashboard forecasts are
part of or rotating
situational display in the
center of our radio room
floor.





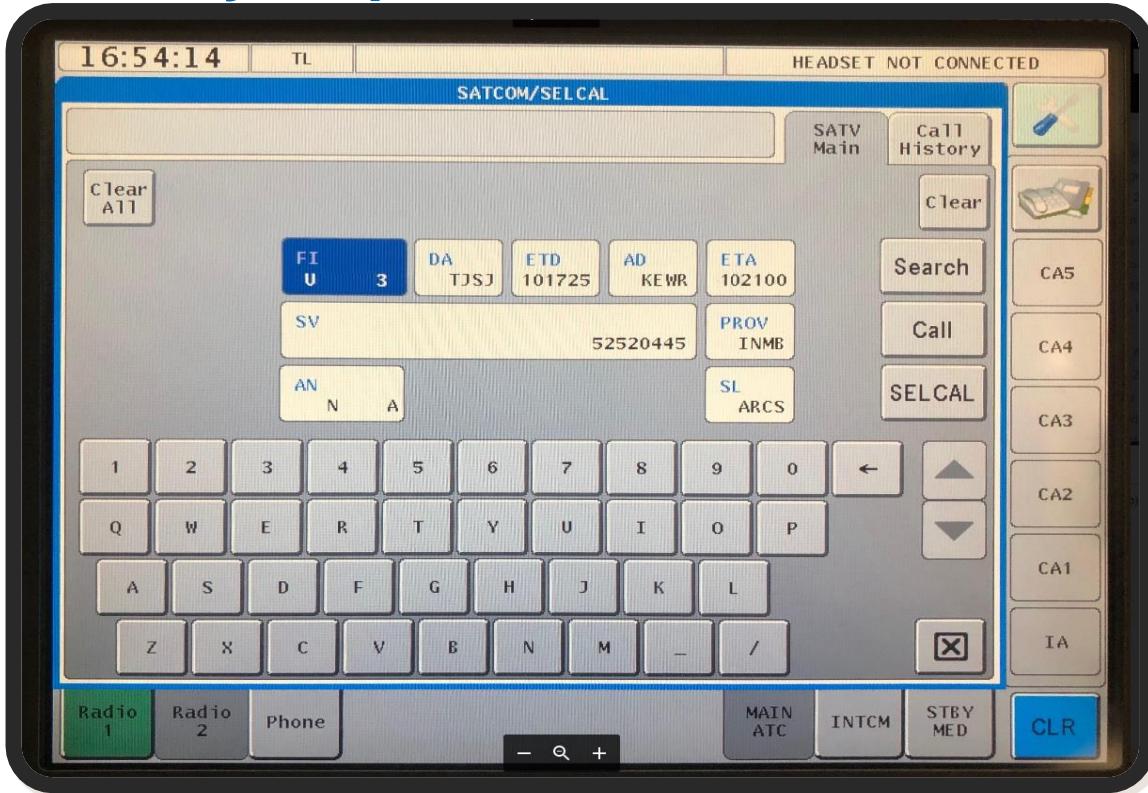
Sunday, September 10, 2017

NYC Radio Operators were already utilizing the highest available HF frequencies for every geographic area we provide communications for, anticipating another event.





Sunday, September 10, 2017



For a time from 1600z -1710z we utilized SatVoice and VHF radio while HF was affected.

Sunday, September 10, 2017

HF comms normalized approximately 1850z when normal operations resumed.

Rockwell Collins Aviation Voice Services current frequencies can be found at <http://radio.arinc.net>



Rockwell
Collins
Building trust every day

Atlantic Pacific Login

Atlantic HF Frequency Assignments

Valid from April 3, 2018, 1100Z - 1900Z

	Air Traffic Control		LDOC / Phone Patch	
	Primary	Secondary	Primary	Secondary
Gulf of Mexico / S. America	11330 kHz	8918 kHz	11342 kHz	8933 kHz
Caribbean / N. Atlantic	6586 kHz	8918 kHz	6640 kHz	8933 kHz
Northeast U.S.	6577 kHz	5550 kHz	6640 kHz	8933 kHz
Eastern Atlantic	13306 kHz	11396 kHz	13348 kHz	11342 kHz
Coastal VHF Maritime Canada to Virginia	129.90 MHz			
Coastal VHF Carolinas to Florida and Gulf of Mexico	130.70 MHz			
New York ARINC SatVoice	436623			

For more information contact New York ARINC at +1-631-589-7272

*Flights may call on-ground VHF for HF frequency assignments at the designated gateways or on the extended range VHF when airborne.