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"Rummaging in the government's attic"

Description of document: Records re: progress and status of Department of Transportation / Federal Aviation Administration Next Generation Air Transportation System (NextGen) system implementation, 2016-2017

Requested date: 17-July-2017

Released date: 28-August-2017

Posted date: 20-November-2017

Source of document: FOIA Request
Assistant Administrator for NextGen
National Freedom of Information Act Office, AFN-140
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591
Fax: (202) 267-6514
Online electronic FOIA request form: [Washington, DC FOIA](#)

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**U.S. Department
of Transportation**

**Federal Aviation
Administration**

Assistant Administrator for NextGen

**800 Independence Avenue SW
Washington, DC 20591**

AUG 28 2017

Re: Freedom of Information Act (FOIA) request 2017-008738

This responds to your July 17, 2017 Freedom of Information Act (FOIA) requesting a copy of the current plan to encourage general aviation operators to equip their aircraft with ADS-B (Automatic Dependent Surveillance) ahead of the January 1, 2020 ADS-B Out mandate and a copy of the most recent five monthly reports to the NextGen Advisory Committee and/or (NAC) Subcommittee regarding oversight and monitoring of Data Com, ADS-B and RNP equipage.

A records search was conducted in the NextGen Performance and Outreach office and located 11 documents, totaling 165 pages of records responsive to your request. They are as follows:

1. NextGen Integration Working Group (2016 Data Comm brief NAC Report)
2. Equip 2020 ADS-B Equipage & Avionics Performance Update – December 7, 2016
3. NextGen Priorities – Data Comm – Reporting Progress
4. Equip 2020 ADS-B Equipment & Avionic Performance Update – January 1, 2017
5. Equip 2020 ADS-B Equipment & Avionic Performance Update – February 1, 2017
6. NextGen Priorities – Data Comm – Reporting Progress
7. Equip 2020 FAA Update – April 18, 2017
8. Data Comm – Reporting Progress
9. ADS-B Out NAC SC Update – May 18, 2017
10. Data Comm – Status Report
11. ADS-B Outreach Plan to GA FY 2017-2018

The Federal Aviation Administration does not report on operator RNP equipage, thus there are no records to provide regarding RNP for this FOIA Request.

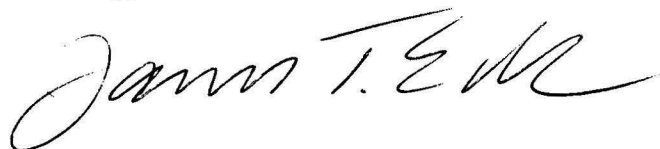
Enclosed is the invoice containing the amount due and payment instructions.

The undersigned is responsible for the partial no records determination that the Office of NextGen has no records responsive to your request on the RNP equipage. Should you consider this no records response a denial of your request, you may request reconsideration of this determination by writing to the Assistant Administrator for Finance and Management (AFN-140, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC, 20591 or through electronic mail at: FOIA-Appeals@faa.gov. Your request must be made in writing

within 90 days from the date of this letter and must include all information and arguments relied upon. Your letter must also state that it is an appeal from the above-described denial of a request made under the FOIA. The envelope containing the appeal should be marked "FOIA Appeal."

You also have the right to seek dispute resolution services from the FAA FOIA Public Liaison via phone (202-267-7799) or email (7-AWA-ARC-FOIA@faa.gov) noting FOIA Public Liaison in the Subject or the Office of Government Information Services (<https://ogis.archives.gov>) via phone (202-741-5770 / toll-free—1-877-684-6448; fax – 202-741-5769); or email (ogis@nara.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "James T. Eck". The signature is fluid and cursive, with the first name "James" being the most prominent part.

James T. Eck
Assistant Administrator for NextGen

Enclosures
11 Documents
Invoice

Next**GEN**

NextGen Integration Working Group Data Comm



FAA

Data Comm Accomplishments

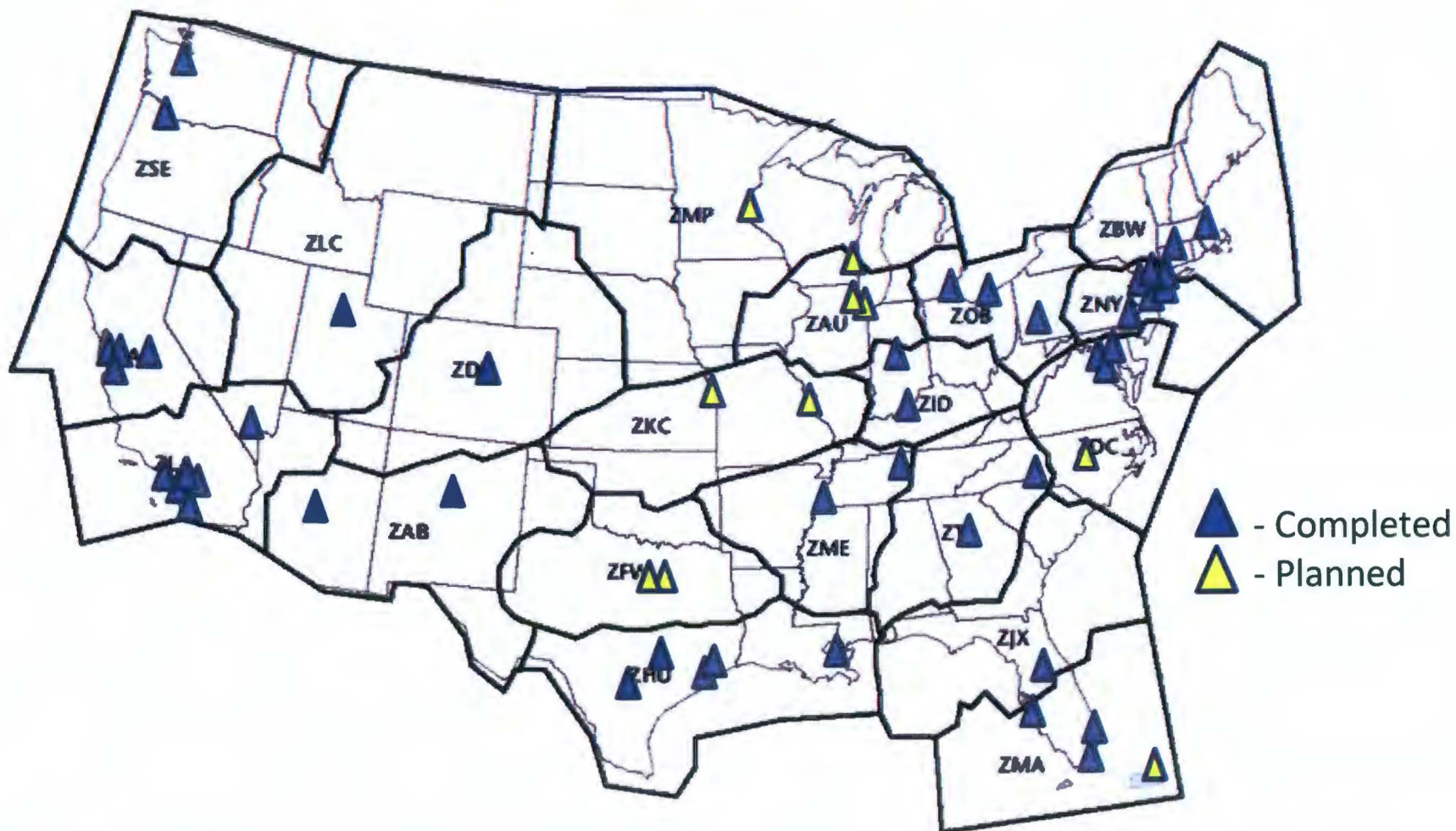
- Tower Controller Pilot Data Link Communications (CPDLC) Departure Clearance (DCL) implementation 24 months ahead of schedule
- Equipped 972 aircraft through the incentive (as of Sep 7)
 - ✦ 1,792 Data Comm equipped aircraft operating in the NAS (as of Sep 7)
- Baselined En Route Full Services at Final Investment Decision
 - ✦ Reduced set of services due to budget reductions
 - ✦ Set of services coordinated with operator stakeholders
 - ✦ Met NAC NIWG milestone
- Developed proposed framework for approving media beyond VDL-2, to include VDL-0, for use in En Route airspace
 - ✦ Briefed PARC CWG and DCIT on framework
- Transitioning into operations evaluations and integration and test for En Route Initial Services

Data Comm

Rolling Plan Implementation Commitments

- Departure Clearance Tower Services Baseline Waterfall
 - ✦ Data Comm service available at 45 towers - approximately 24 months ahead of APB Baseline schedule
 - ✦ Conducting over 13,000 operations per week
- En Route Initial Services
 - ✦ Completed detailed design for En Route Initial Services
 - ✦ Services to be delivered are: Transfer of Communications, Initial Check-In, Altimeter Settings, Altitudes, Speeds (Limited), Crossing Restrictions (Limited), Airborne Reroutes/Go Button, Controller Initiated Reroutes (Limited), Direct-to-Fix (Initial)
 - ✦ Vetting proposed implementation waterfall with stakeholders
 - ✦ Working towards a 2019 initial capability at first ARTCC

Data Comm Tower Services (DCL) Implementation Status



S1P1 Tower Service Status

Key Sites			
Site Name	Site ID	ARTCC ID	IOC
Boise (Non-CPDLC)	BOI	ZLC	06/10/15
KS 1: Salt Lake City	SLC	ZLC	08/07/15
KS 2: Houston Intd	IAH	ZHU	09/03/15
KS 3: Houston Hobby	HOU	ZHU	09/10/15
NAP – NAP Intgr Compl	N/A	ZLC/ZT	09/30/15

Group A			
Site Name	Site ID	ARTCC ID	IOC
New Orleans	MSY	ZHU	01/21/16
Austin	AUS	ZHU	02/04/16
San Antonio	SAT	ZHU	02/19/16
Los Angeles	LAX	ZLA	03/10/16
Las Vegas	LAS	ZLA	03/25/16
San Diego	SAN	ZLA	04/07/16
John Wayne	SNA	ZLA	04/25/16
Burbank	BUR	ZLA	05/06/16
Ontario	ONT	ZLA	05/18/16
San Francisco	SFO	ZOA	06/08/16
Oakland	OAK	ZOA	06/23/16
San Jose	SJC	ZOA	07/06/16
Sacramento	SMF	ZOA	07/20/16
Reno (Non-CPDLC)	RNO	ZOA	07/25/16
Phoenix	PHX	ZAB	08/10/16
El Paso (Non-CPDLC)	ELP	ZAB	08/25/16
Portland	PDX	ZSE	09/14/16
Seattle	SEA	ZSE	09/15/16
Albuquerque	ABQ	ZAB	09/21/16
Dallas Love	DAL	ZFW	10/10/16
Dallas FTW	DFW	ZFW	10/24/16
Will Rogers (Non-CPDLC)	OKC	ZFW	10/24/16
Honolulu (Non-CPDLC)	HNL		11/03/16
Anchorage (Non-CPDLC)	ANC		11/10/16

Group B			
Site Name	Site ID	ARTCC ID	IOC
Louisville	SDF	ZID	02/10/16
Cincinnati (Non-CPDLC)	CVG	ZID	02/25/16
Indianapolis	IND	ZID	03/07/16
Columbus (Non-CPDLC)	CMH	ZID	03/11/16
Memphis	MEM	ZME	03/25/16
Nashville	BNA	ZME	04/13/16
Adams Field (Non-CPDLC)	LIT	ZME	04/17/16
Denver	DEN	ZDV	05/03/16
Atlanta	ATL	ZTL	05/19/16
Charlotte	CLT	ZTL	06/02/16
Greensboro (Non-CPDLC)	GSO	ZTL	06/07/16
Orlando	MCO	ZIX	06/30/16
Miami	MIA	ZMA	07/29/16
Ft Lauderdale	FLL	ZMA	08/12/16
Tampa	TPA	ZMA	08/29/16
St Louis	STL	ZKC	10/03/16
Kansas City	MCI	ZKC	10/17/16
Tulsa (Non-CPDLC)	TUL	ZKC	10/17/16
Minn-St Paul	MSP	ZMP	11/07/16
Eppley Field (Non-CPDLC)	OMA	ZMP	11/07/16
Jacksonville (Non-CPDLC)	JAX	ZJX	11/07/16
Palm Beach (Non-CPDLC)	PBI	ZMA	11/14/16
San Juan	SIU	ZMA	12/12/16

Group C			
Site Name	Site ID	ARTCC ID	IOC
Newark	EWR	ZNY	02/12/16
J.F. Kennedy	JFK	ZNY	02/25/16
La Guardia	LGA	ZNY	03/14/16
Teterboro	TEB	ZNY	03/24/16
Westchester	HPN	ZNY	04/12/16
Philadelphia	PHL	ZNY	04/22/16
Boston	BOS	ZBW	05/13/16
Providence (Non-CPDLC)	PVD	ZBW	05/13/16
Bradley	BDL	ZBW	06/10/16
Albany (Non-CPDLC)	ALB	ZBW	06/15/16
Detroit	DTW	ZOB	06/30/16
Cleveland	CLE	ZOB	07/13/16
Pittsburgh	PIT	ZOB	07/29/16
Buffalo (Non-CPDLC)	BUF	ZOB	07/29/16
Balt/Wash	BWI	ZDC	08/16/16
Dulles	IAD	ZDC	08/30/16
Reagan	DCA	ZDC	09/14/16
Andrews (Non-CPDLC)	ADW	ZDC	10/03/16
Chicago Midway	MDW	ZAU	10/24/16
Chicago O'Hare	ORD	ZAU	11/07/16
Milwaukee	MKE	ZAU	11/07/16
Raleigh/Durham	RDU	ZDC	11/07/16

TDLS Sites Color Key	
CPDLC DCL Site	
Enhanced PDC Only Site	
Site Operational	
Site Operational (PDC Only)	

- Waterfall reflects **challenge** schedule dates (calendar year)
 - Baseline schedule Tower deployment dates are 2016-2019
- Tower Phase provides infrastructure for En Route starting in 2019



Data Comm

Rolling Plan Pre-Implementation Commitments

- En Route Full Services
 - ✦ Baselined En Route Full Services - commitment completed
 - ✦ Baselined services are Controller Initiated Routes (Full), Crossing Restrictions (Full), Direct-to-Fix (Full), Advisory Messages, Holding Instructions
- Implementation Framework for Non-VHF Digital Link (VDL) Mode 2 Media
 - ✦ Developed proposed framework for approving media beyond VDL-2, to include VDL-0, for use in En Route airspace
 - ✦ Briefed PARC CWG and DCIT on framework

Data Comm

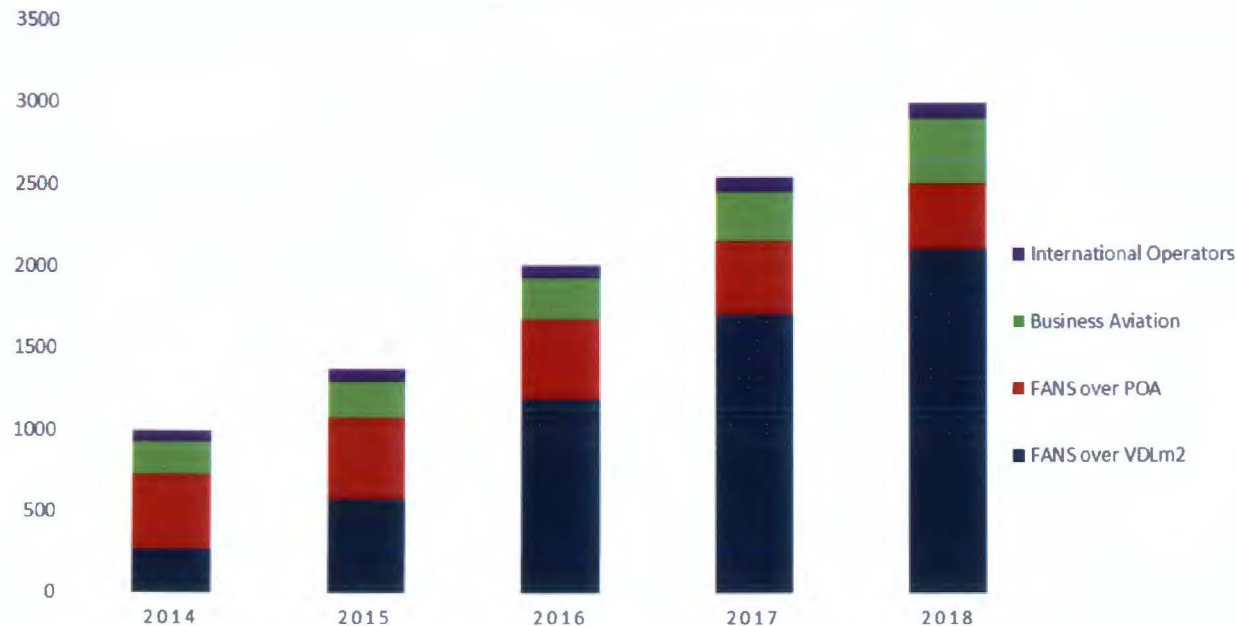
Rolling Plan Industry Commitments

- Airlines to Equip 1,900 Aircraft
 - ✦ 1,792 Data Comm equipped aircraft operating in the NAS (as of Sep 7)
 - ✦ 972 of the 1,792 were equipped through the incentive (as of Sep 7)
 - ✦ Ahead of schedule to meet 1,900 goal by 2019
- Implementation of Framework for Non-VHF Digital Link (VDL) Mode 2 Media
 - ✦ Developed proposed framework for approving media beyond VDL-2, to include VDL-0, for use in En Route airspace
 - ✦ Briefed PARC CWG and DCIT on framework



S1P1 Tower Service - Equipage Status

DATA COMM AIRCRAFT



- **1,792 Data Comm equipped aircraft operating in the NAS as of September 7, 2016**
 - Includes FANS/VDL-2, FANS/POA, business jets, and international aircraft
- **972 aircraft have been equipped through the Data Comm equipage initiative**



S1P1 Tower Service - Operational Summary



9 US Mainline Air Carriers



32 Aircraft Types



19 International Air Carriers



Business Jet Operators



Benefits & Metrics

Day	Site	Length (hrs.)	Time Savings per Flight: Data Comm vs. Non Data Comm	Total Time Saved
2/16/2016	KEWR	7.5	Average 23.7 min less gate delay and 5 min less taxi delay	195 minutes
4/1/2016	KJFK	24	Average 9 min less gate delay and 7.8 min less taxi delay	299 minutes
4/3/2016	KEWR	24	Average 16.3 min less gate delay and 11 min less taxi delay	274 minutes
6/28/2016	KEWR	9.5	Average 21.5 min less gate delay and 5.3 min less taxi delay	208 minutes
6/29/2016	KEWR	9	Average 8.2 min less taxi delay	63 minutes
7/28/2016	KJFK	24	Average 6 min less taxi delay	60 minutes
8/13/2016	KBWI	9	Average 26.5 min less gate delay and 9.1 min less taxi delay	398 minutes
9/10/2016	KIAH	7	Average 2.3 min less gate delay and 1.5 min less taxi delay	38 minutes
9/19/2016	KLAX	31	Average 2.8 min less gate delay and 10.7 min less taxi delay	105 minutes

- The above are a sample of weather events resulting in time savings benefits for Data Comm flights
- Time saved per flight is determined by comparing Data Comm flights that received revisions to Non Data Comm flights that received revisions
 - ✦ Gate Delay values for flights that received revisions before pushback
 - ✦ Taxi Delay values for flights that received revisions after pushback



Benefits – Controller Feedback

- “During SWAP this equipment is amazing! We routinely see Data Comm enabled aircraft who require a re-route due to weather never stop their taxi for take off. Aircraft not participating in Data Comm, must stop taxi, contact tower for new route, then sit and contact airline dispatch until everything is coordinated and approved for takeoff. This can take a long time, and blocks an active taxiway. During SWAP, Data Comm users are simple to process, and receive no delay waiting.” – NYC Area Controller
- “Got a full route clearance to Asia somewhere and it was with a foreign carrier that had a thick accent and is already a struggle to understand during basic shortened clearance readbacks. Controller told me he was so relieved to be able to send that clearance via CPDLC and have the pilot wilco it without any voice exchanges and confusion/frustration.” – LAX Controller

Benefits – Controller Feedback

- “In MIA a 777 got a reroute number 1 in line for takeoff, he was routed offshore away from the storms, center put the reroute in, controller sent the clearance via CPDLC and 3 minutes later they were rolling down the runway, that would have been at least 10-20 min traditionally, if they needed more fuel up to an hour.” – National Controller SME
- “So I happened to be working clearance last night during a weather reroute. The only CPDLC I had to reroute worked like a charm! All other I had to read and wished they were FANS equipped.” – IAH Controller

Data Comm Risks

- Training
 - ✦ Development and acceptance of training materials
 - ✦ Timing of training to support initial operations at a site
 - ✦ Operator flight crew training to support waterfall
- Operator commitment and coordination to support the implementation waterfall
 - ✦ Equipped aircraft needed to support Data Comm site IOCs
 - ✦ Support to FAA testing and air-to-ground interoperability
- Coordination of the delivery and integration of the component subsystems
 - ✦ ERAM/TDLS/DCNS/FTI/Aircraft
- Site coordination
 - ✦ Coordinating across multiple facilities and operators to transition to Data Comm
- Air-to-Ground interoperability
 - ✦ Issue resolution between air and ground systems can be complex



Federal Aviation
Administration

Equip 2020

ADS-B Equipage & Avionics Performance Update

December 7, 2016



Dec 2016 Equipage(good install) Monitoring

Rule Driven ADS-B Out Aircraft Detected by FAA network

Category	As of 1-Nov-2016 (ATAT)	As of 1-Dec-2016 (ATAT)	Monthly Increase		% of estimated fleet equipped^, as of 1-Dec-2016
All Link Version 2	20,468	22,016	1,548	7.56%	
1090ES	14,785	16,221	1,436	9.71%	
UAT	4,904	4,991	87	1.77%	
Dual	781	805	24	3.07%	
US General Aviation (includes EXP & LSA)	16,989	18,292	1,303	7.67%	11.4% - 18.3%
US Air Carrier	743	787	44	5.92%	13.1% - 15.7%
Intl General Aviation*	1,376	1,464	88	6.40%	
Intl Air Carrier	522	546	24	4.60%	
U.S. Military & U.S. Special Use	20	27	7	35.00%	

<http://www.faa.gov/nextgen/equipadsb/equipment/monitoring/>

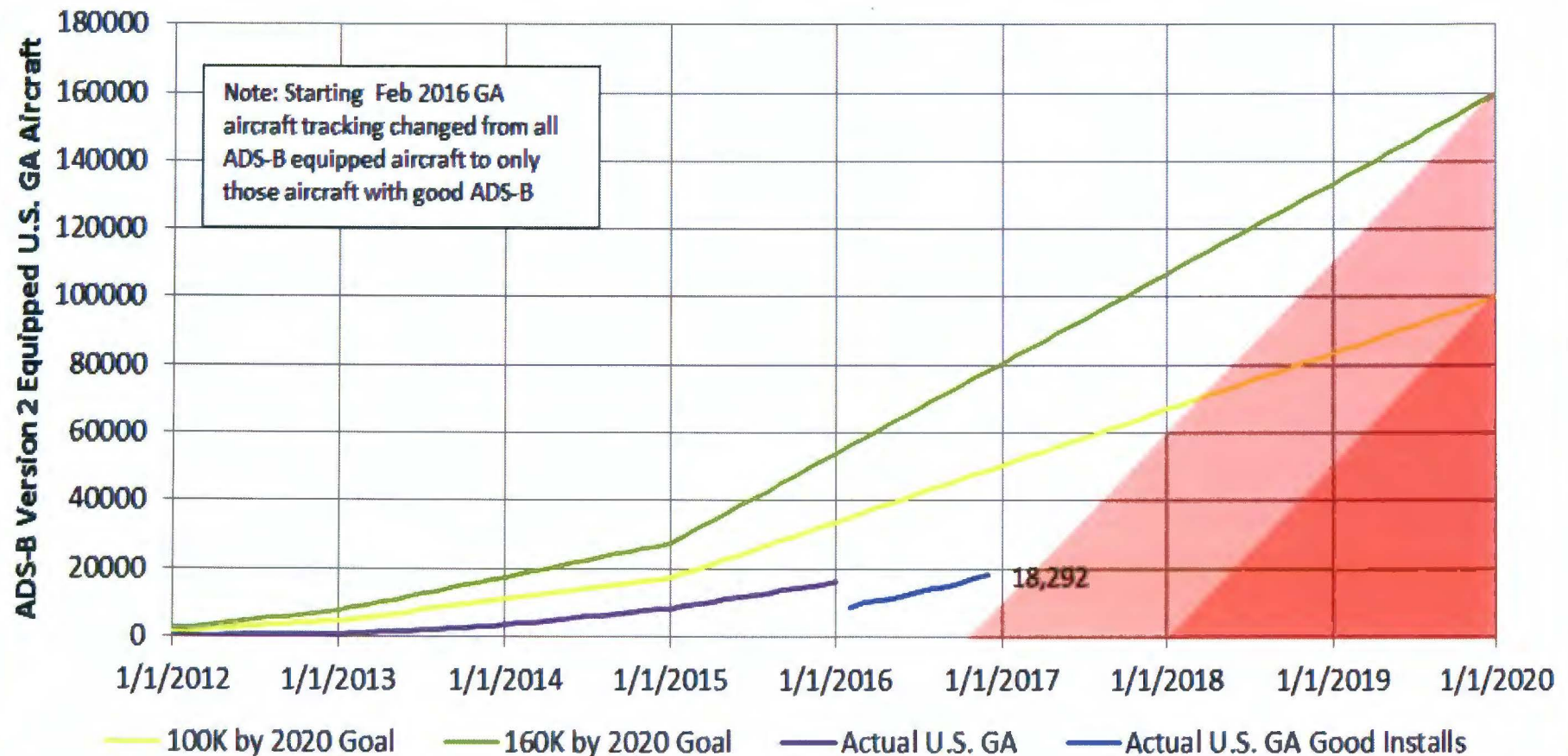
*Aircraft incorrectly reporting outside US ICAO block are included in Intl GA count.

^percentage range based on estimates of 5,000-6,000 US air carrier aircraft and 100K-160K US general aviation aircraft

ATAT – The ATAT was used to generate these numbers starting on June 1, 2016

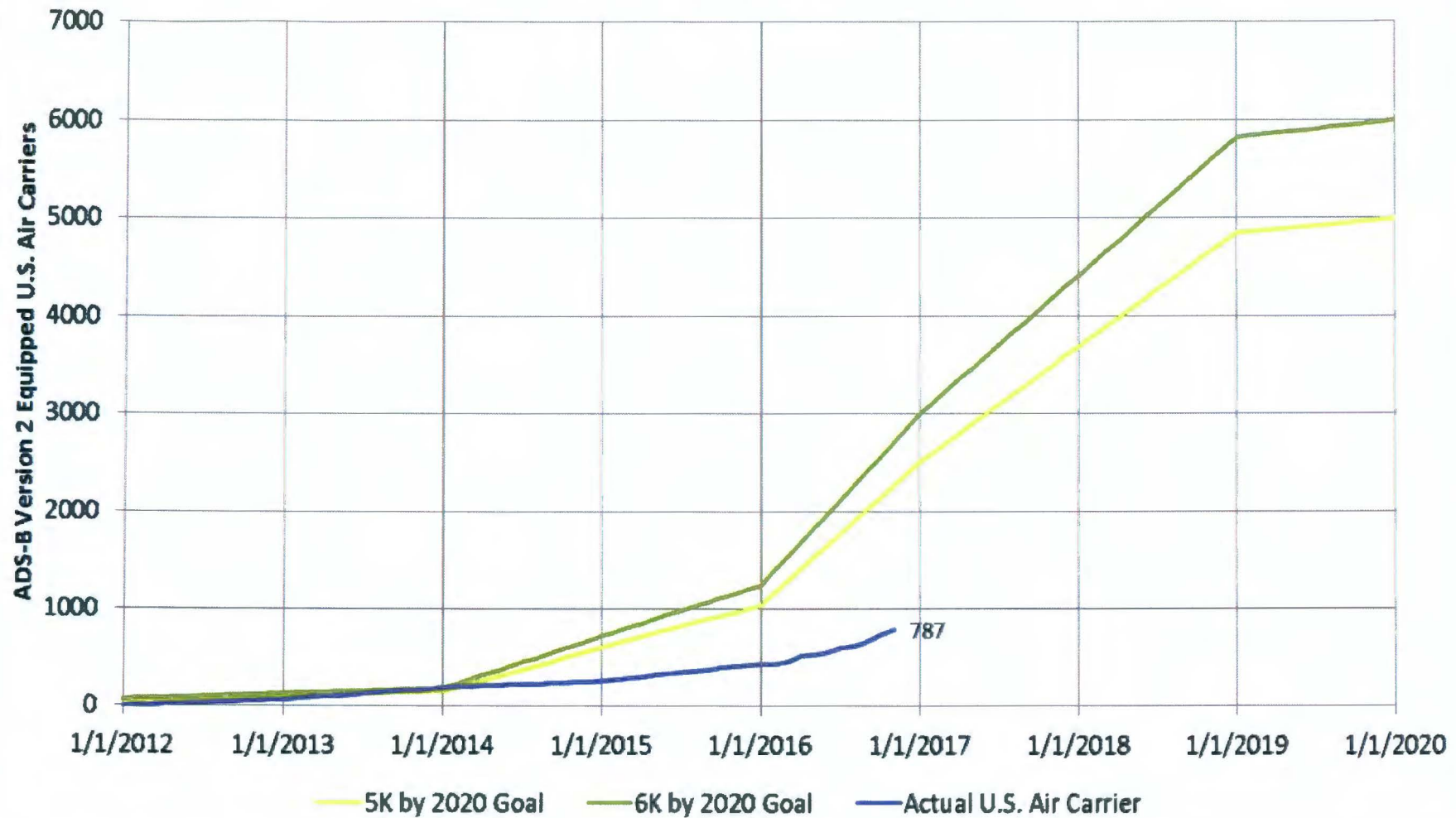


ADS-B Out Version 2 Equipage U.S. General Aviation (good installs) (including Exp & LSA aircraft) Actuals vs 100K and 160K by 2020 Goals

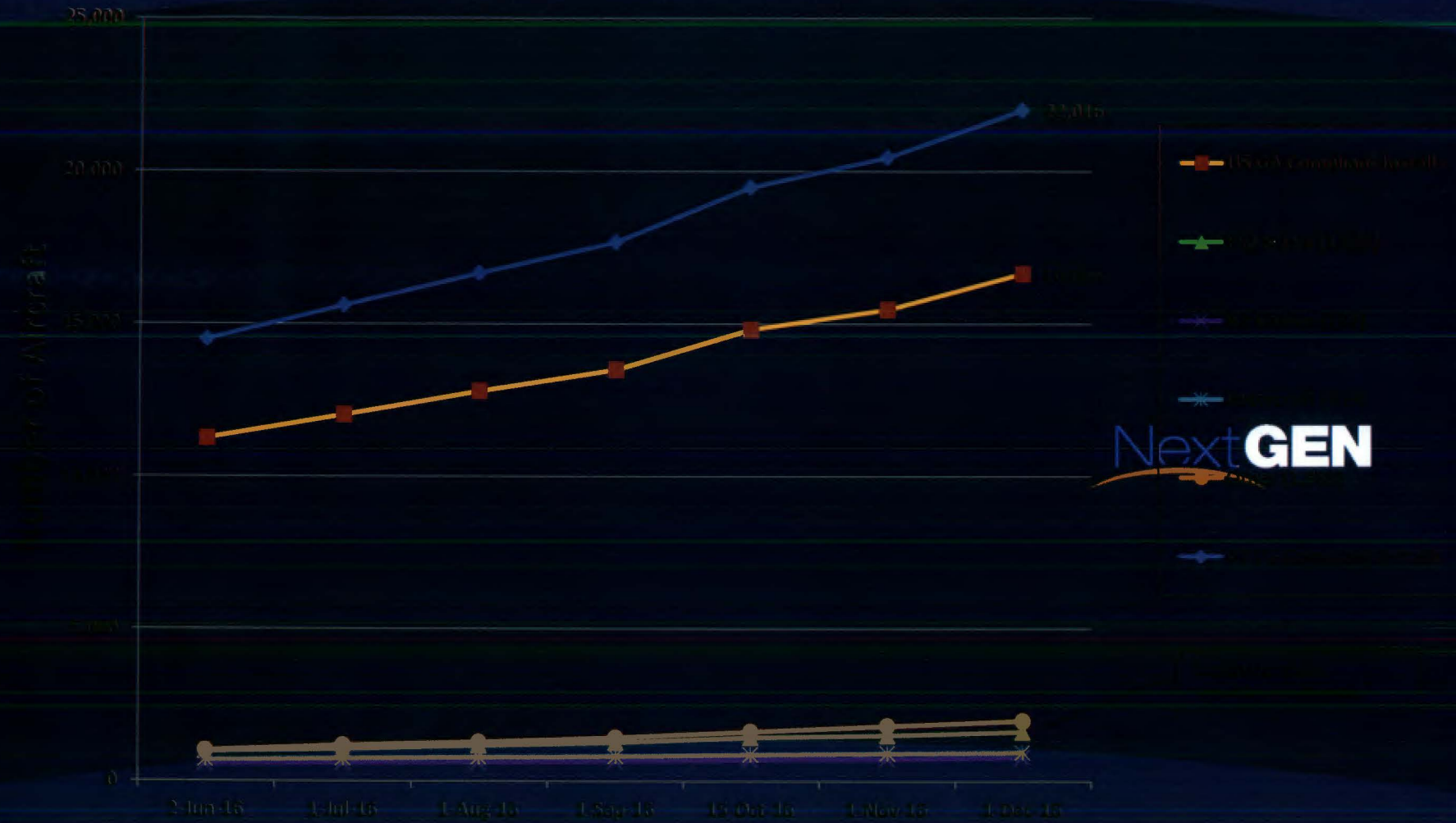


FAA

ADS-B Out Version 2 Equipage (good installs) U.S. Air Carriers Actuals vs 5K and 6K by 2020 Goals

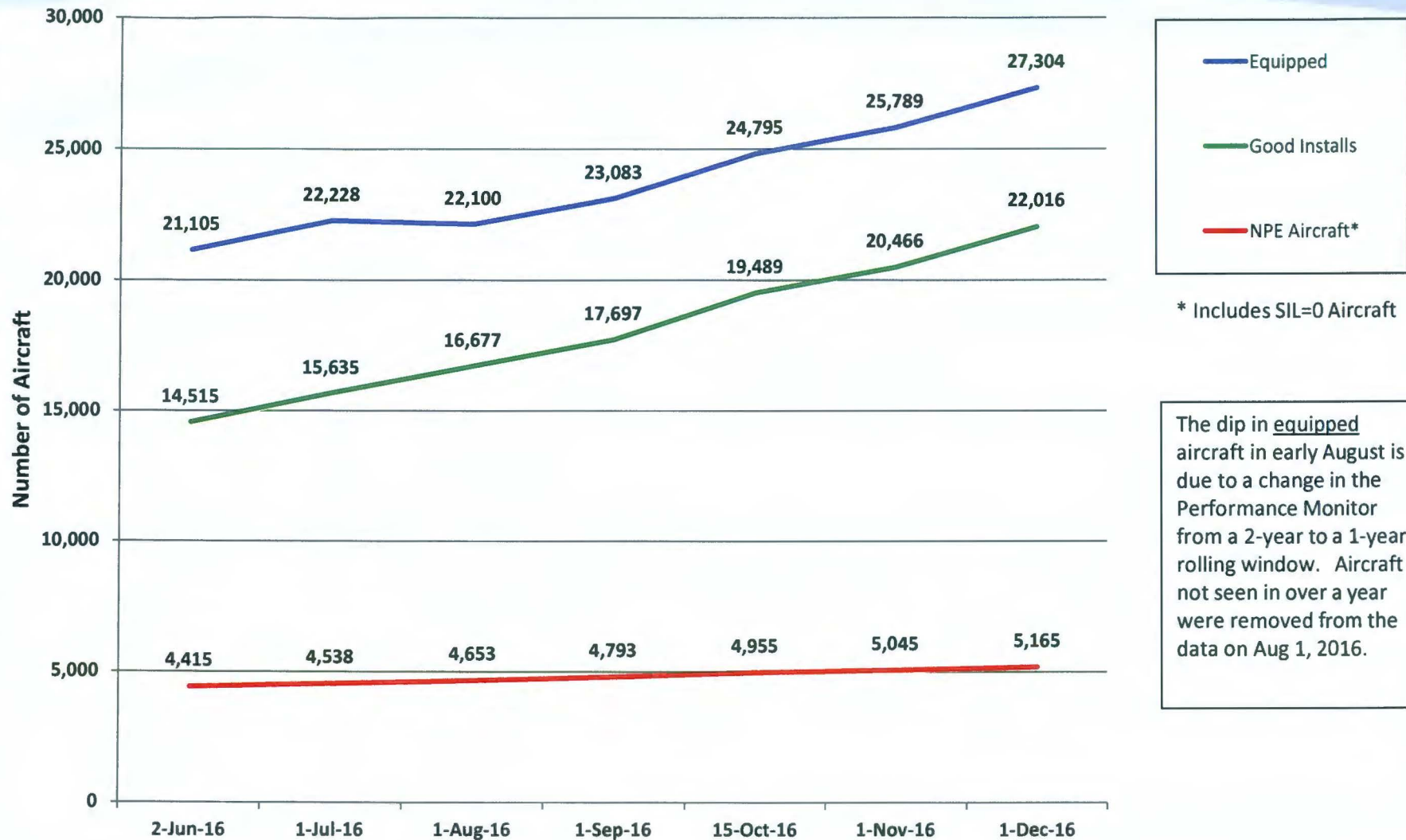


US ADS-B Compliant Install Breakdown

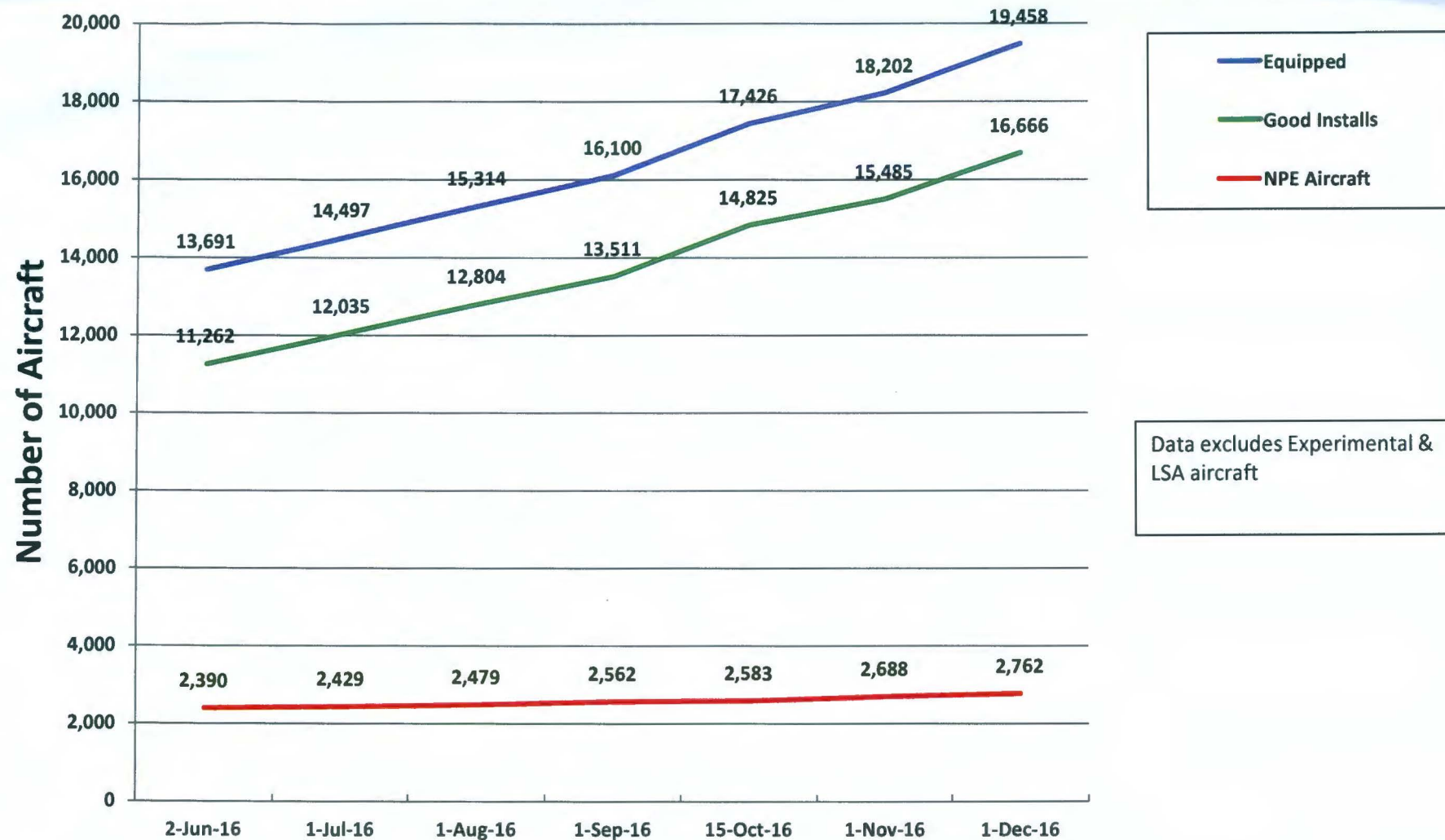


NextGEN

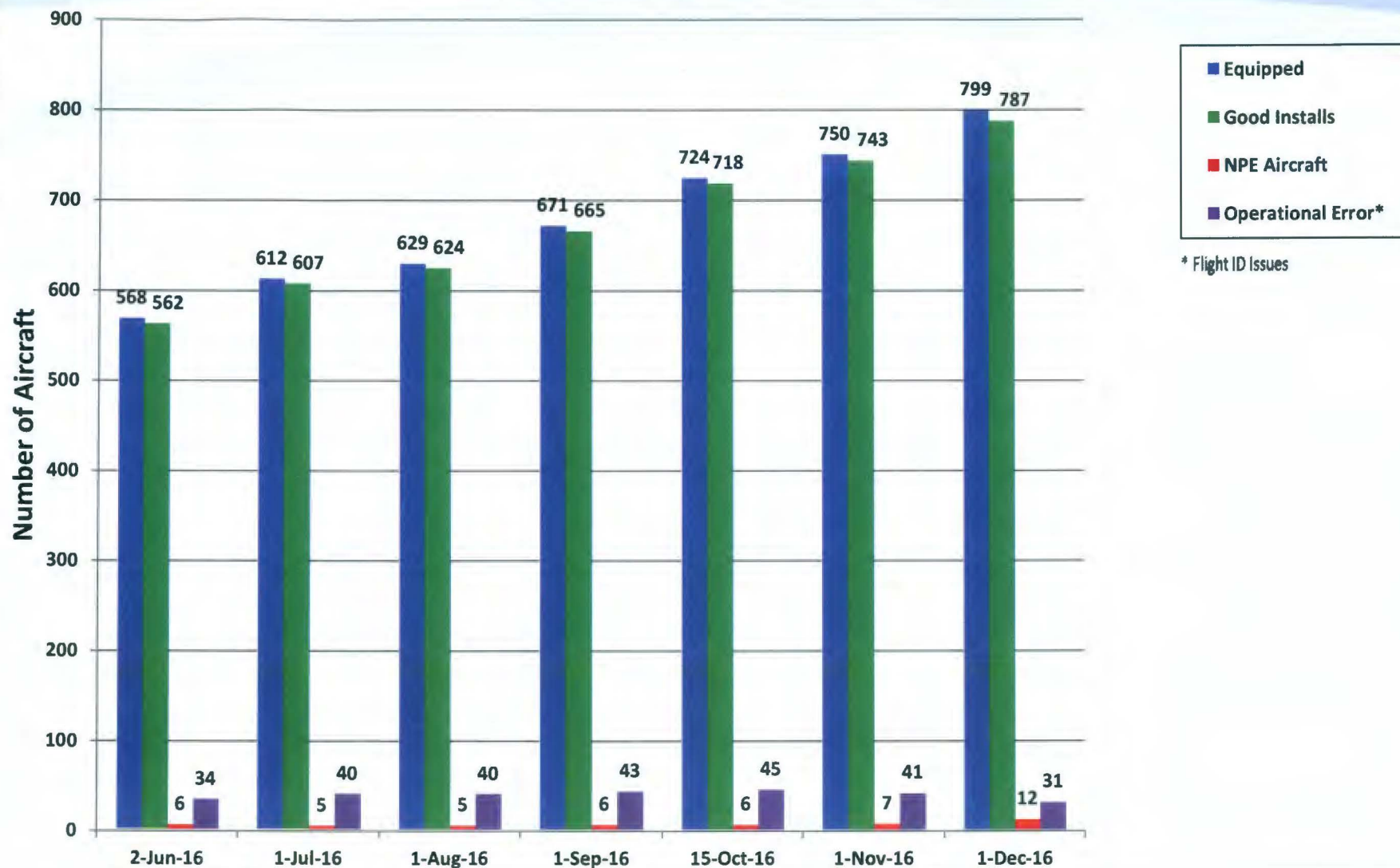
All US Aircraft Equipage & Avionics Performance



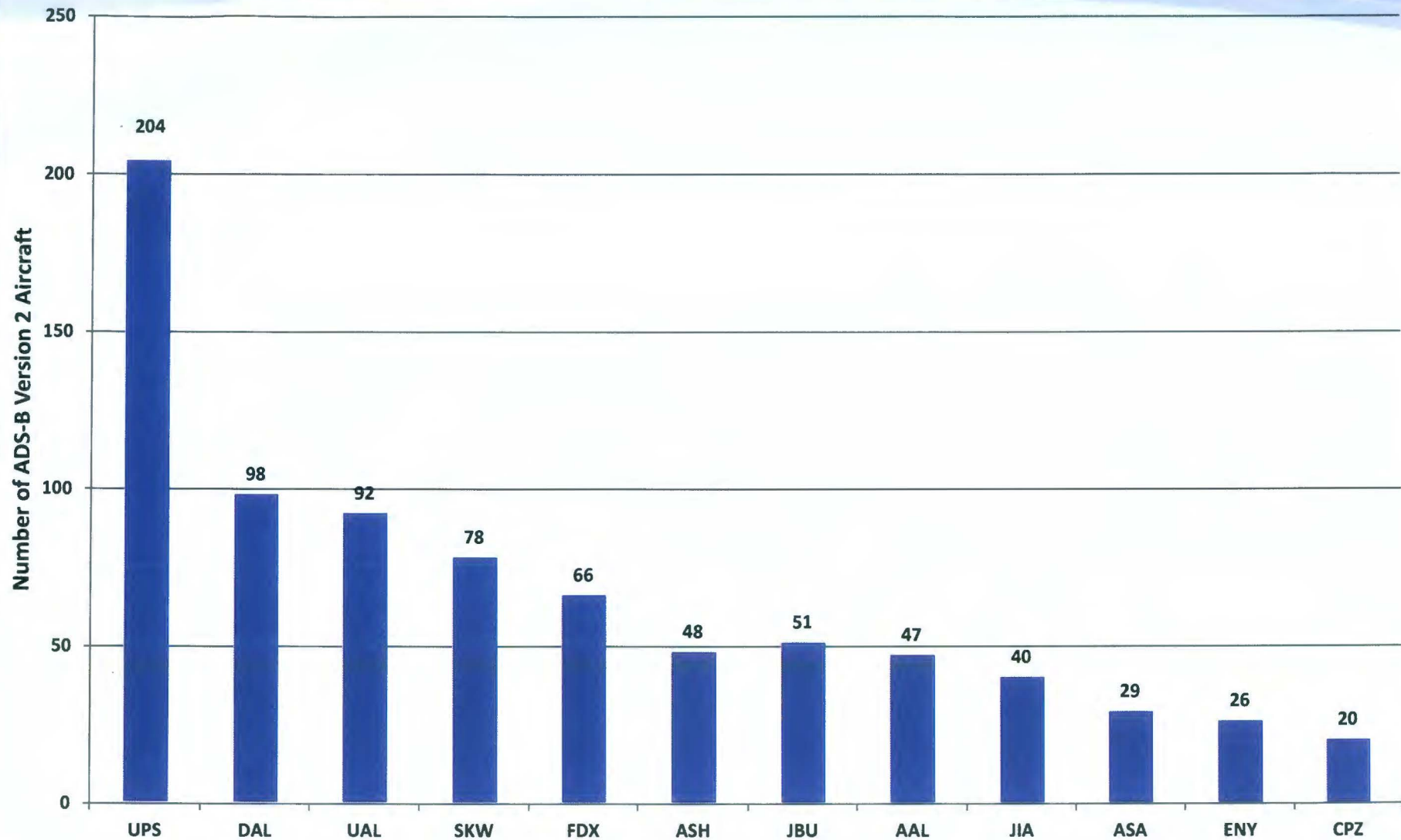
US GA Fixed-Wing Equipage and Avionics Performance



US Air Carrier Equipage & Avionics Performance



Equipage Status - U.S. Air Carrier (12-1-16)



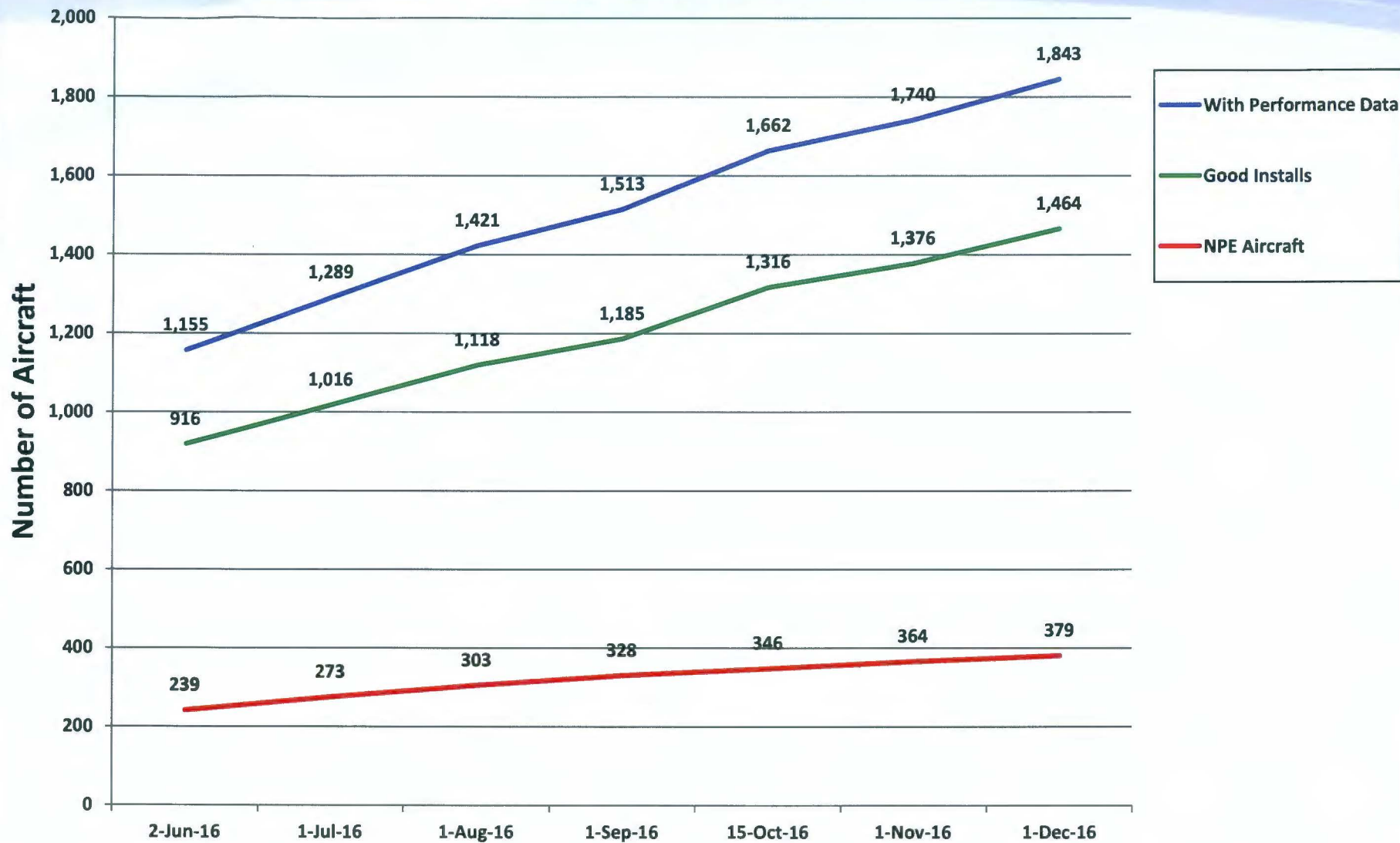
USA Exp and LSA Aircraft Equipage and Avionics Performance



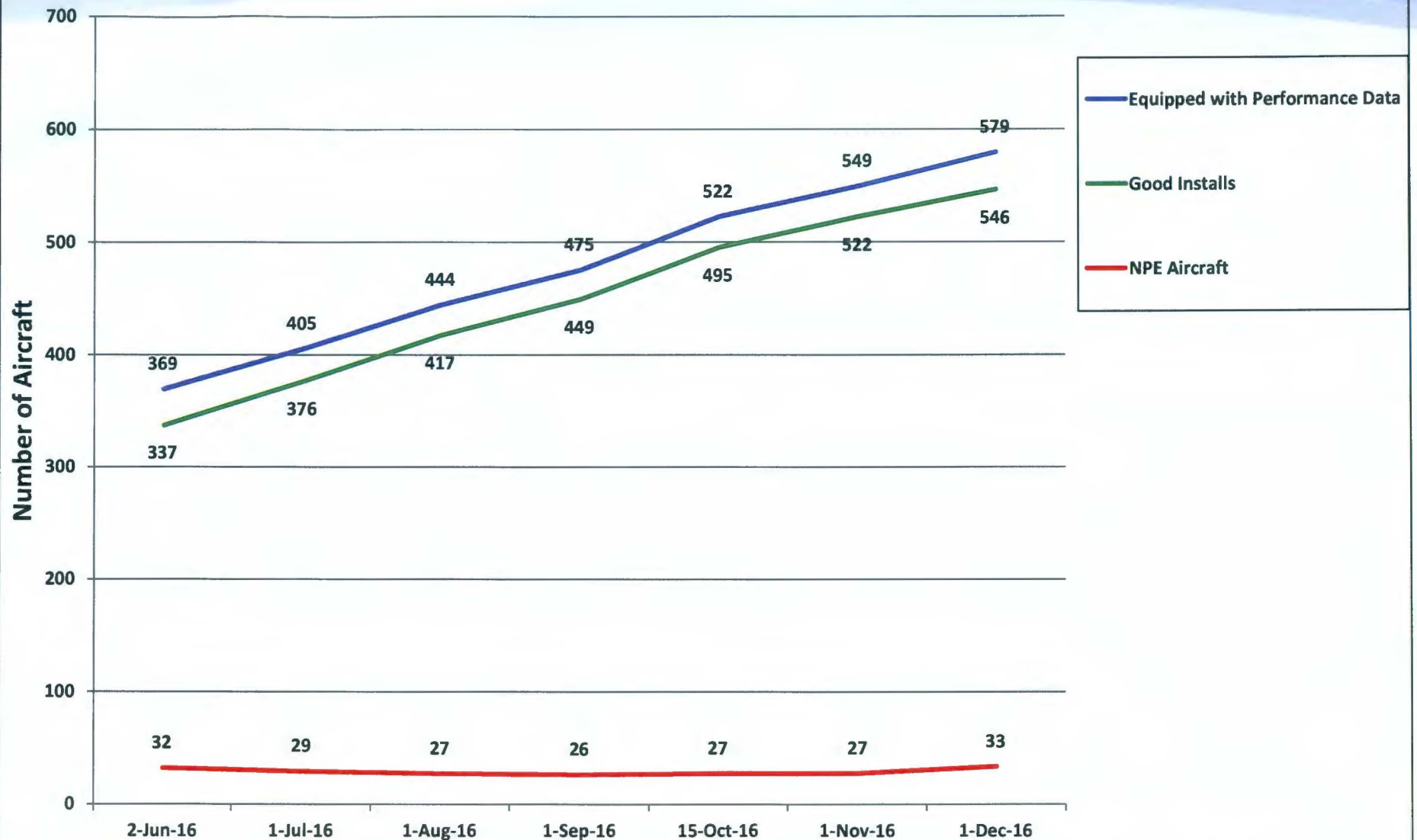
US Rotorcraft Equipage & Avionics Performance



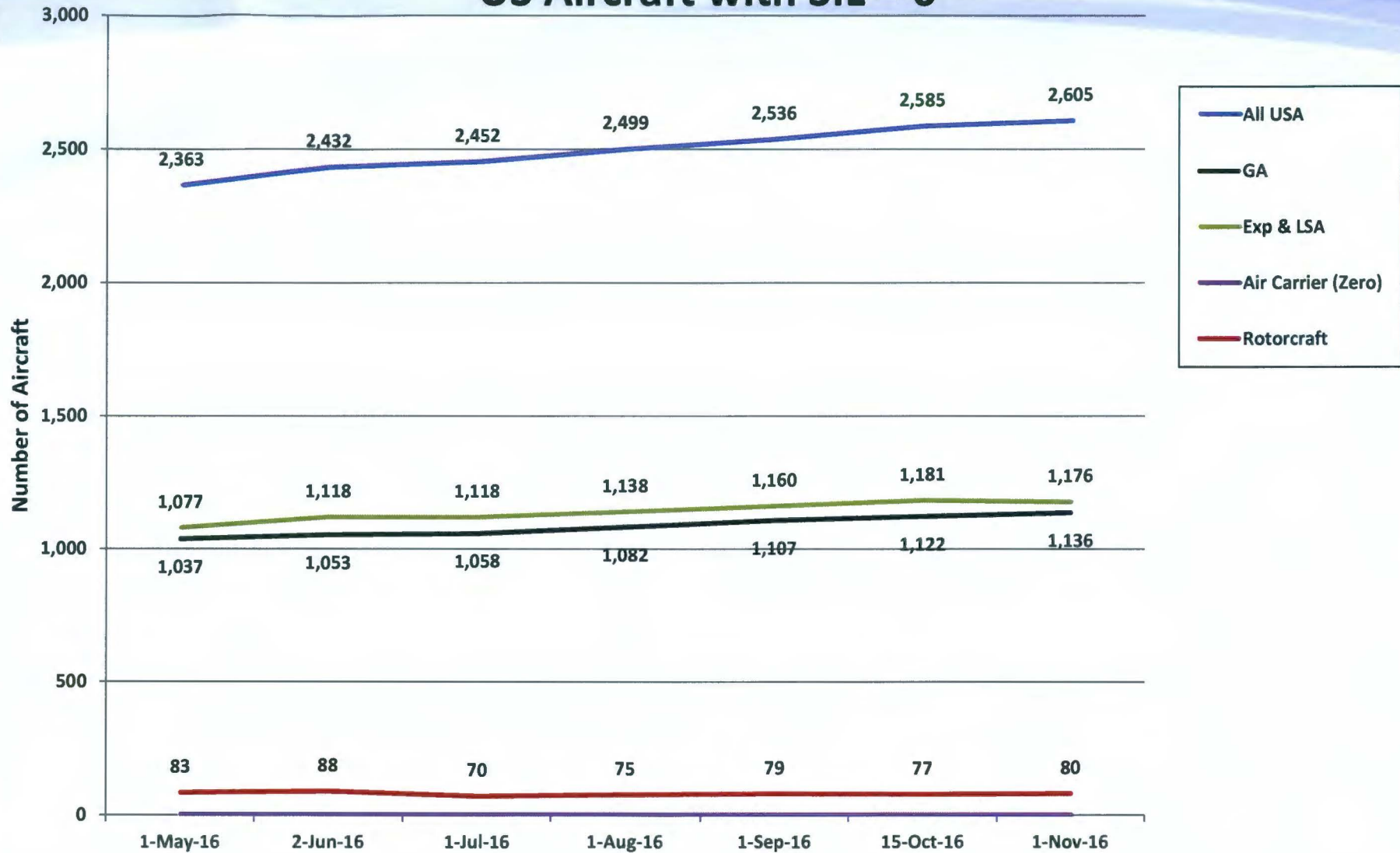
International GA Equipage & Avionics Performance



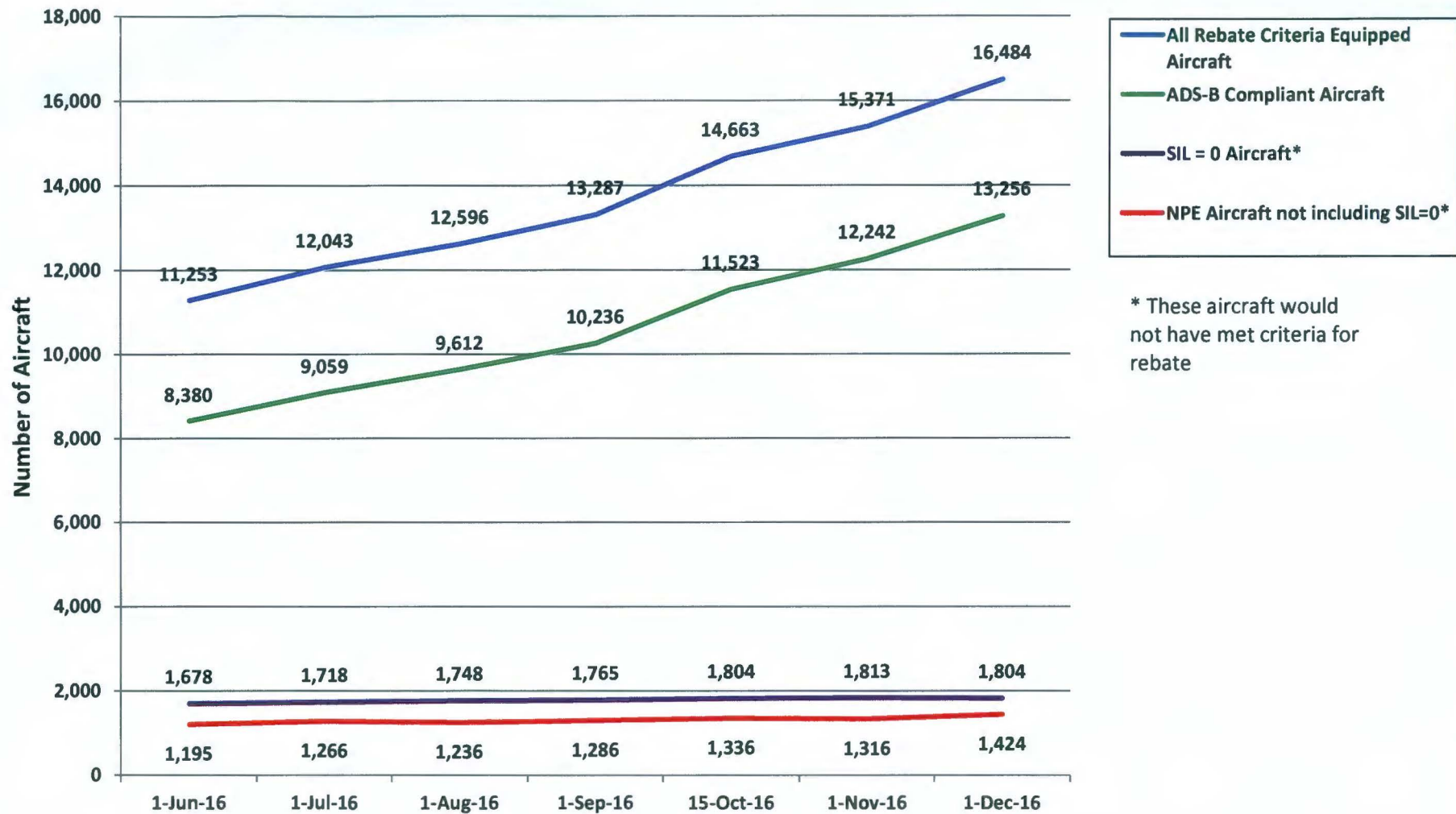
International Air Carrier Aircraft Equipage and Avionics Performance



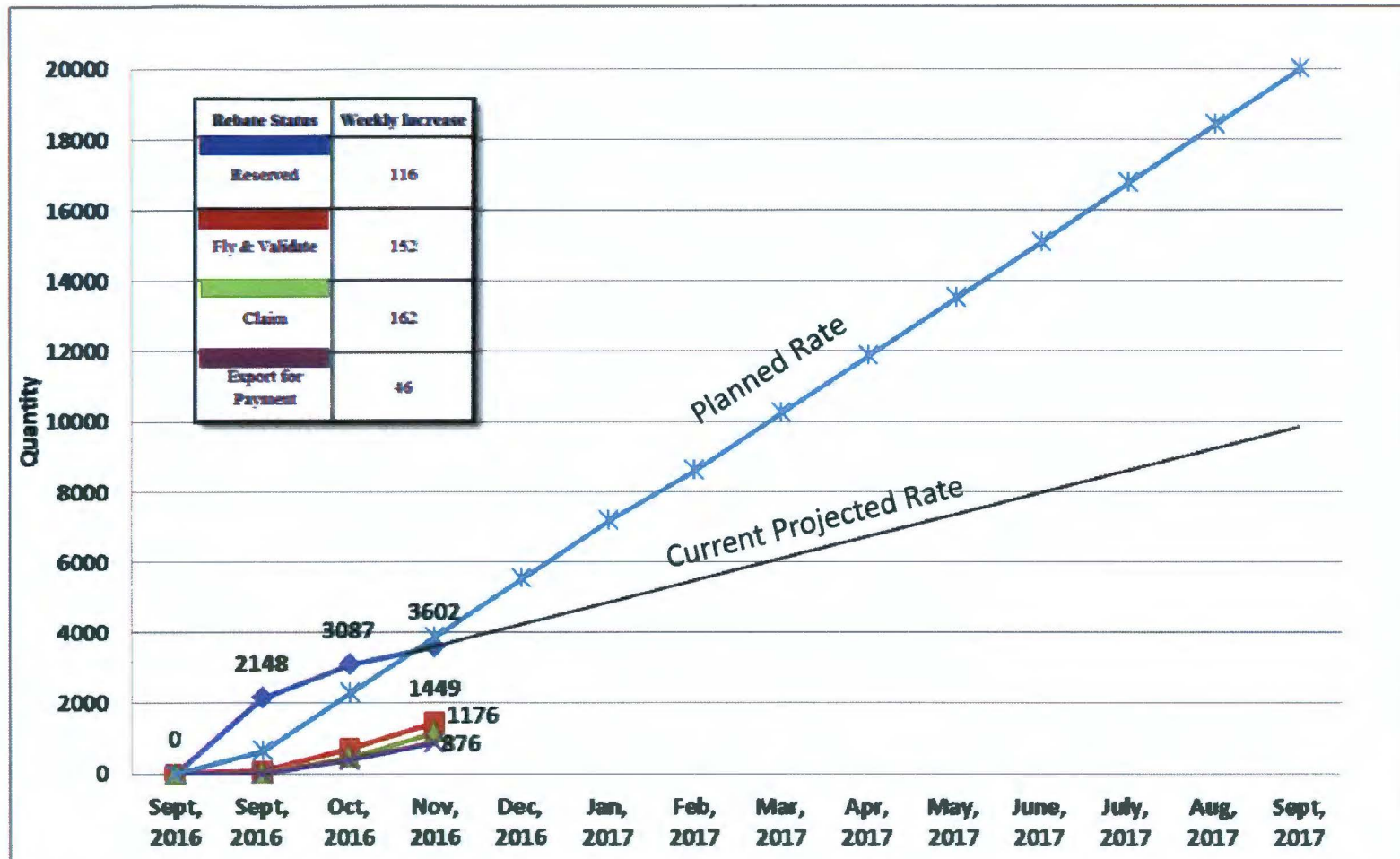
US Aircraft with SIL = 0



US Fixed-Wing Single-Engine (rebate) Aircraft Equipage & Performance



General Aviation Rebate Program Status



Data as of 11/29/16



Next**GEN**

NextGen Priorities – Data Comm

Reporting Progress



FAA

Data Comm – Quarterly Report

- **Tower Services Waterfall – Q4 2016**
 - Two towers remain – scheduled to complete challenge waterfall in December
- **Implementation Framework for non-VDL Mode 2 Media – Q1 2017**
 - FAA and Industry crafted implementation framework collaboratively
 - Briefed framework to Performance-based Aviation Rulemaking Committee (PARC) Communications Working Group (CWG) in August 2016
 - Briefed framework to joint FAA-Industry Data Comm Implementation Team (DCIT) and Data Comm NIWG Team in November 2016
- **Initial Operating Capability (IOC) for Initial En Route Services at first Air Route Traffic Control Center (ARTCC) – Q3 2019**
 - Completed En Route Services CHI Demo with controllers from multiple facilities
 - Coordinating rollout and waterfall with stakeholders
- **Airlines to equip 1,900 aircraft – Q4 2019**
 - 2,555 Data Comm equipped aircraft operating in the NAS as of November 21, 2016 (includes FANS/VDL Mode 2, FANS/VDL Mode 0, business jets, and international aircraft)
 - 1,011 aircraft have been equipped through the equipage initiative



Data Comm - Tower Implementation

Key Sites			
Site Name	Site ID	ARTCC ID	IOC
Borise (Non-CPDLC)	BOI	ZLC	06/10/15
KS 1: Salt Lake City	SLC	ZLC	08/07/15
KS 2: Houston Intl	IAH	ZHU	09/03/15
KS 3: Houston Hobby	HOU	ZHU	09/10/15
NAP – NAP Intgr Compl	N/A	ZLC/ZT	09/30/15

Group A			
Site Name	Site ID	ARTCC ID	IOC
New Orleans	MSY	ZHU	01/21/16
Austin	AUS	ZHU	02/04/16
San Antonio	SAT	ZHU	02/19/16
Los Angeles	LAX	ZLA	03/10/16
Las Vegas	LAS	ZLA	03/25/16
San Diego	SAN	ZLA	04/07/16
John Wayne	SNA	ZLA	04/25/16
Burbank	BUR	ZLA	05/06/16
Ontario	ONT	ZLA	05/18/16
San Francisco	SFO	ZOA	06/08/16
Oakland	OAK	ZOA	06/23/16
San Jose	SJC	ZOA	07/06/16
Sacramento	SMF	ZOA	07/20/16
Reno (Non-CPDLC)	RNO	ZOA	07/25/16
Phoenix	PHX	ZAB	08/10/16
El Paso (Non-CPDLC)	ELP	ZAB	08/29/16
Portland	PDX	ZSE	09/14/16
Seattle	SEA	ZSE	09/15/16
Albuquerque	ABQ	ZAB	09/21/16
Dallas Love	DAL	ZFW	10/10/16
Dallas FFW	DFW	ZFW	10/15/16
Will Rogers (Non-CPDLC)	CKC	ZFW	10/24/16
Honolulu (Non-CPDLC)	HNL		12/01/16
Anchorage (Non-CPDLC)	ANC		12/09/16

Group B			
Site Name	Site ID	ARTCC ID	IOC
Louisville	SDF	ZID	02/10/16
Cincinnati (Non-CPDLC)	CVG	ZID	02/29/16
Indianapolis	IND	ZID	03/07/16
Columbus (Non-CPDLC)	CMH	ZID	03/11/16
Memphis	MEM	ZME	03/25/16
Nashville	BNA	ZME	04/13/16
Adams Field (Non-CPDLC)	LIT	ZME	04/17/16
Denver	DEN	ZDV	05/03/16
Atlanta	ATL	ZTL	05/19/16
Charlotte	CLT	ZTL	06/02/16
Greensboro (Non-CPDLC)	GSO	ZTL	06/07/16
Orlando	MCO	ZJX	06/30/16
Miami	MIA	ZMA	07/29/16
Ft Lauderdale	FLL	ZMA	08/12/16
Tampa	TPA	ZMA	08/29/16
St Louis	STL	ZKC	09/29/16
Kansas City	MCI	ZKC	10/11/16
Tulsa (Non-CPDLC)	TUL	ZKC	10/17/16
Minn-St Paul	MSP	ZMP	11/03/16
Eppley Field (Non-CPDLC)	OMA	ZMP	11/09/16
Jacksonville (Non-CPDLC)	JAX	ZJX	11/10/16
Palm Beach (Non-CPDLC)	PBI	ZMA	11/18/16
San Juan	SIJ	ZMA	12/12/16

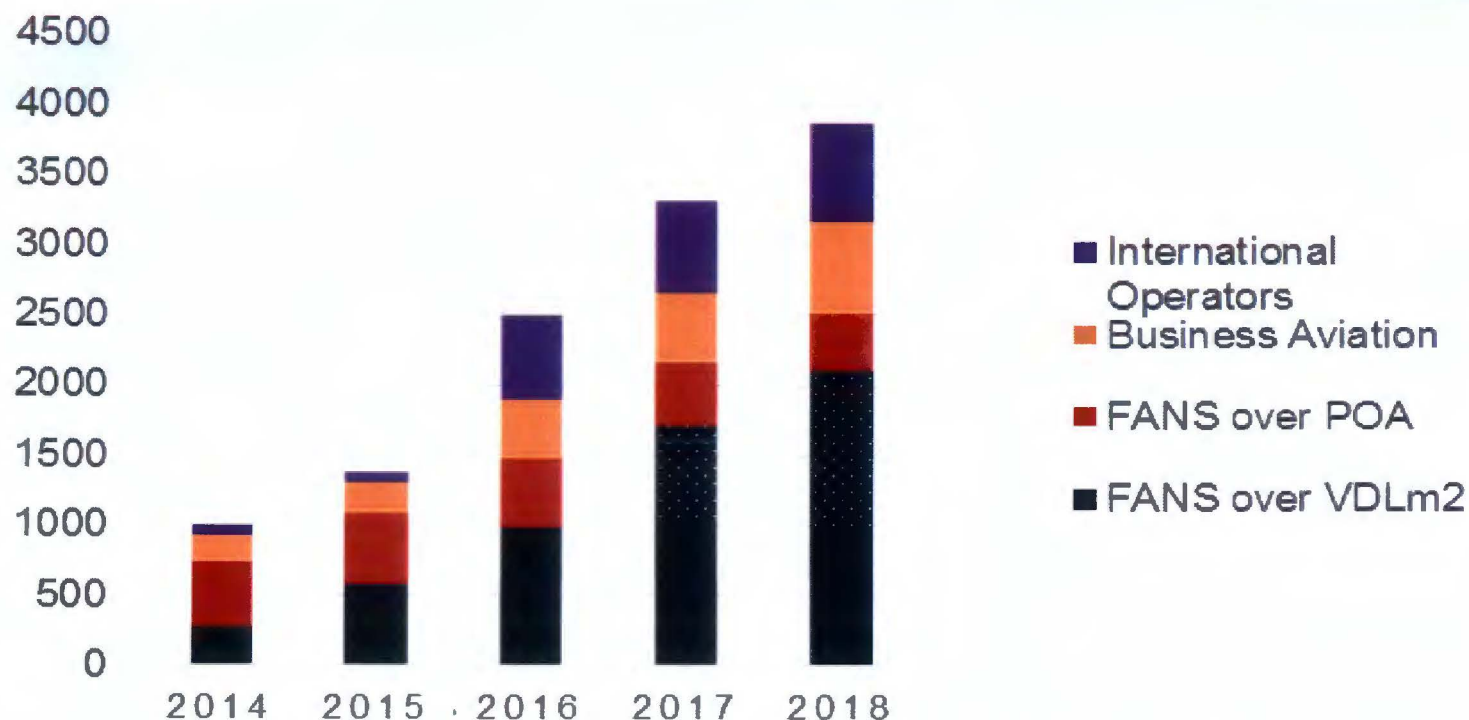
Group C			
Site Name	Site ID	ARTCC ID	IOC
Newark	EWR	ZNY	02/12/16
J F Kennedy	JFK	ZNY	02/25/16
La Guardia	LGA	ZNY	03/14/16
Teterboro	TEB	ZNY	03/24/16
Westchester	HPN	ZNY	04/12/16
Philadelphia	PHL	ZNY	04/22/16
Boston	BOS	ZBW	05/13/16
Providence (Non-CPDLC)	PVD	ZBW	05/13/16
Bradley	BDL	ZBW	05/10/16
Albany (Non-CPDLC)	ALB	ZBW	06/15/16
Detroit	DTW	ZOB	06/30/16
Cleveland	CLE	ZOB	07/13/16
Pittsburgh	PIT	ZOB	07/29/16
Buffalo (Non-CPDLC)	BUF	ZOB	07/29/16
Balt/Wash	BWI	ZDC	08/16/16
Dulles	IAD	ZDC	08/30/16
Reagan	OCA	ZDC	09/14/16
Andrews (Non-CPDLC)	ADW	ZDC	10/03/16
Chicago Midway	MDW	ZAU	10/19/16
Chicago O'Hare	ORD	ZAU	10/29/16
Raleigh/Durham	RDU	ZDC	11/02/16
Milwaukee	MKE	ZAU	12/14/16

TDLS Sites Color Key	
CPDLC DCL Site	
Enhanced PDC Only Site	
Site Operational	
Site Operational (PDC Only)	

- Waterfall reflects challenge schedule dates (calendar year)
 - Baseline schedule Tower deployment dates are 2016-2019
- Tower provides the infrastructure for En Route services

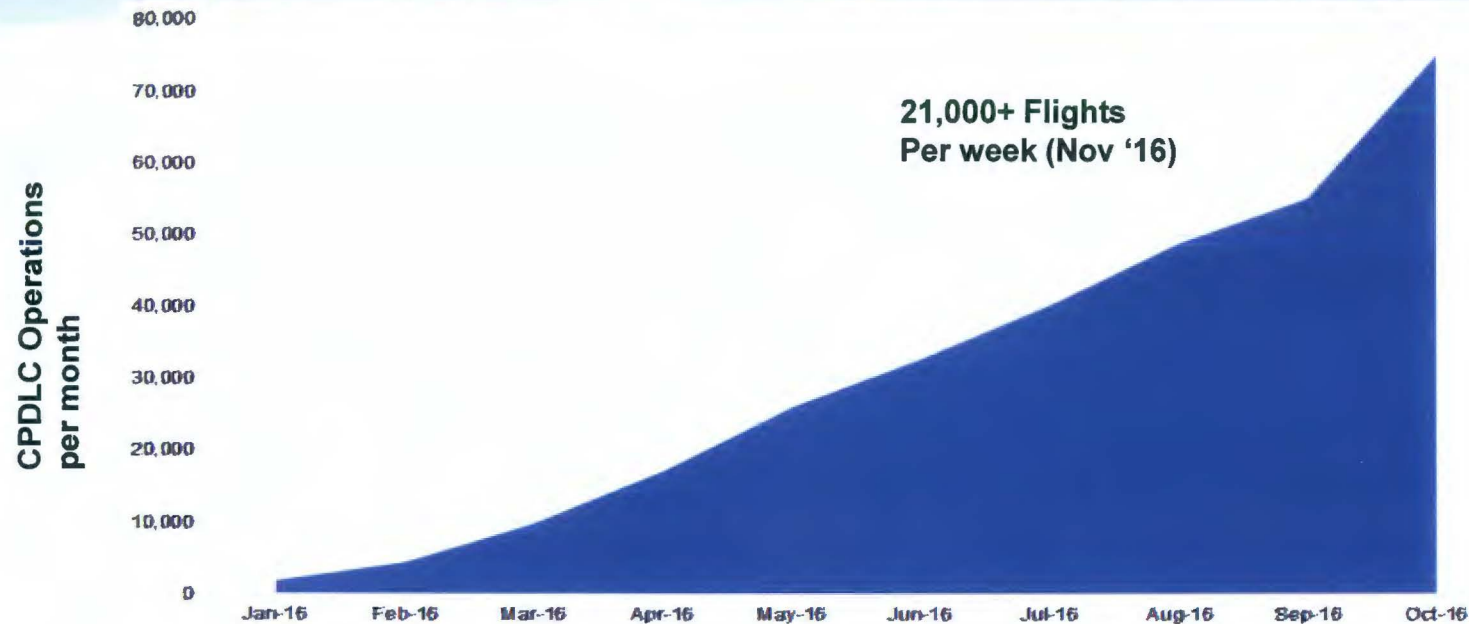


Data Comm - Equipage Status



- **2,555 Data Comm equipped aircraft operating in the NAS as of November 21, 2016**
 - Includes FANS/VDL-2, FANS/POA, business jets, and international aircraft
- **1,011 aircraft have been equipped through the Data Comm equipage initiative**

Data Comm Tower Service - Ops Summary



9 US Mainline Air Carriers



35 Aircraft Types



22 International Air Carriers



Business Jet Operators



Data Comm – Quarterly Report Risks

- **Training**
 - Development and acceptance of training materials
 - Timing of training to support initial operations at a site
 - Operator flight crew training to support waterfall
- **Operator commitment and coordination to support the Tower Services waterfall**
 - Equipped aircraft needed to support Data Comm site IOCs
 - Support to FAA site testing and air-to-ground interoperability
- **Coordination of the delivery and integration of the component subsystems**
 - ERAM/TDLS/DCNS/FTI/Aircraft
- **Site coordination**
 - Coordinating across multiple facilities and operators to transition to Data Comm
- **Air-to-Ground interoperability**
 - Issue resolution between air and ground systems can be complex





**Federal Aviation
Administration**

Equip 2020

ADS-B Equipage & Avionics Performance Update

January 1, 2017



Jan 2017 Equipage Monitoring

V2 ADS-B Out equipped aircraft with compliant performance detected by FAA network

Category	As of 1-Dec-2016 (ATAT)	As of 1-Jan-2017 (ATAT)	Monthly Increase		% of estimated fleet equipped^, as of 1-Jan-2017
All Link Version 2	22,016	23,566	1,550	7.04%	
1090ES	16,221	17,648	1,427	8.80%	
UAT	4,991	5,079	88	1.76%	
Dual	805	838	33	4.10%	
US General Aviation (includes EXP & LSA)	18,292	19,517	1,225	6.70%	12.2% - 19.5%
US Air Carrier	787	842	55	6.99%	14.0.% - 16.8%
Intl General Aviation*	1,464	1,535	71	4.85%	
Intl Air Carrier	546	580	34	6.23%	
U.S. Military & U.S. Special Use	27	29	2	7.41%	

<http://www.faa.gov/nextgen/equipadsb/equipment/monitoring/>

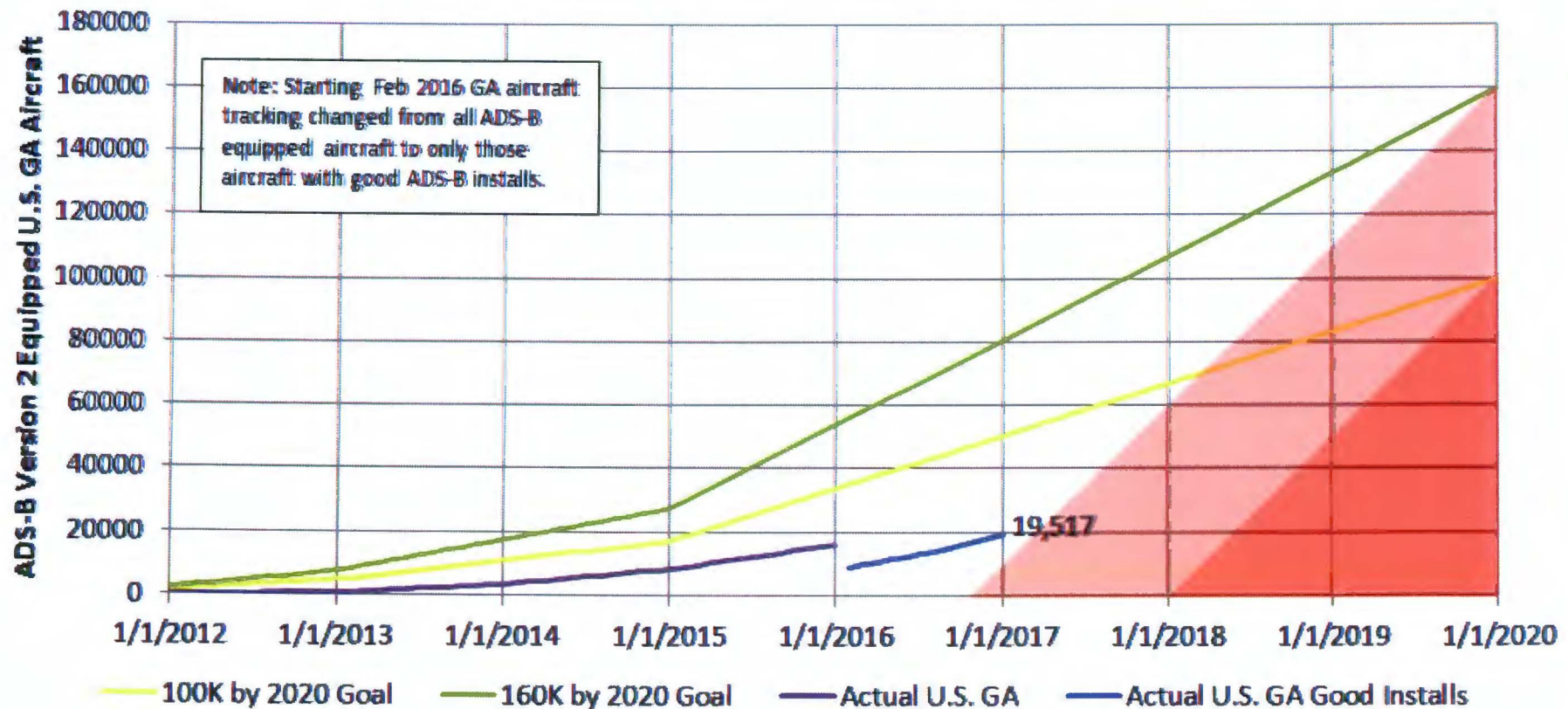
*Aircraft incorrectly reporting outside US ICAO block are included in Intl GA count.

^percentage range based on estimates of 5,000-6,000 US air carrier aircraft and 100K-160K US general aviation aircraft

ATAT – The ATAT was used to generate these numbers starting on June 1, 2016



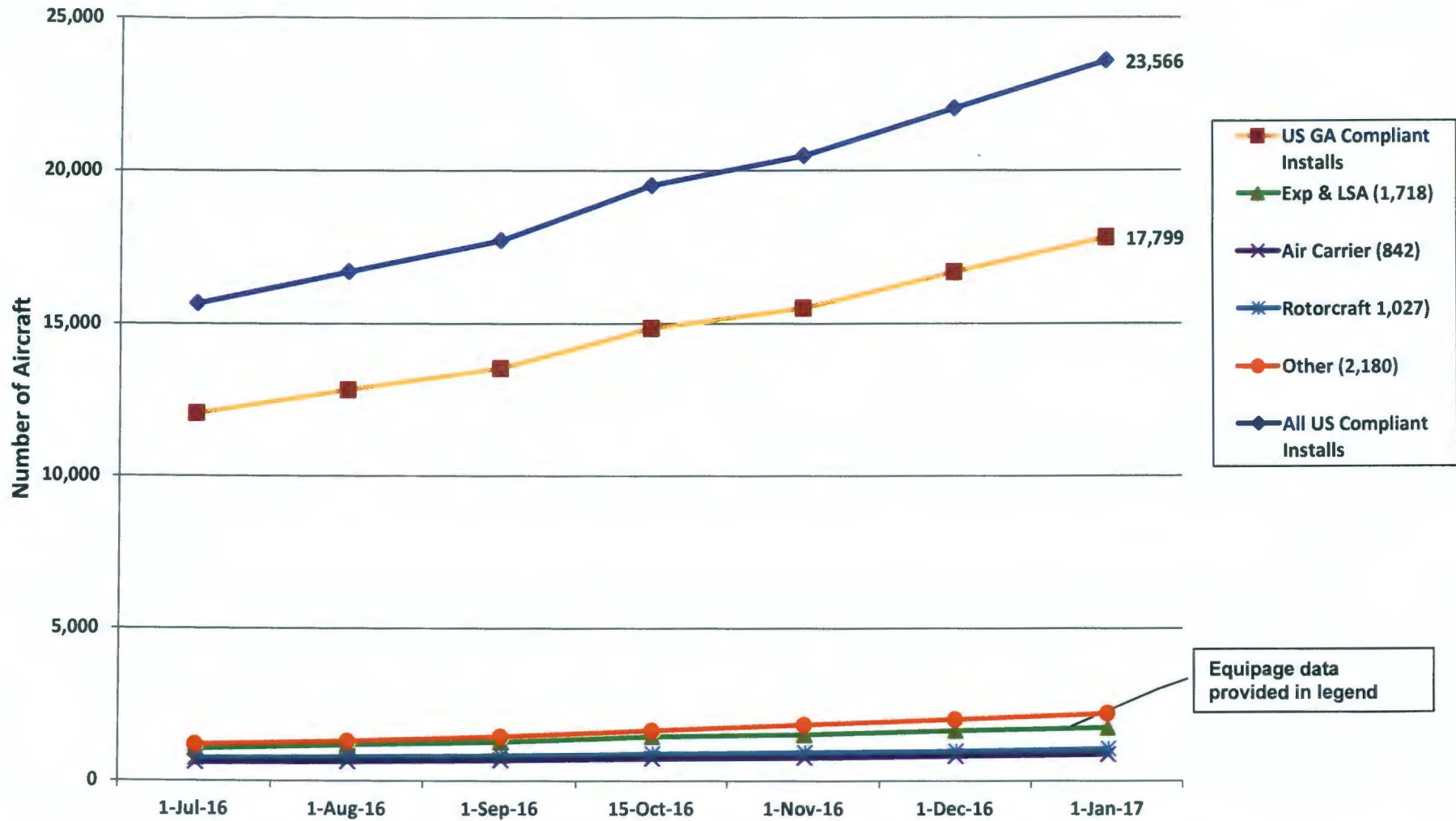
ADS-B Out Version 2 Equipage U.S. General Aviation (good installs) (including Exp & LSA aircraft) Actuals vs 100K and 160K by 2020 Goals



ADS-B Out Version 2 Equipage (good installs) U.S. Air Carriers Actuals vs 5K and 6K by 2020 Goals



US ADS-B Compliant Install Breakdown



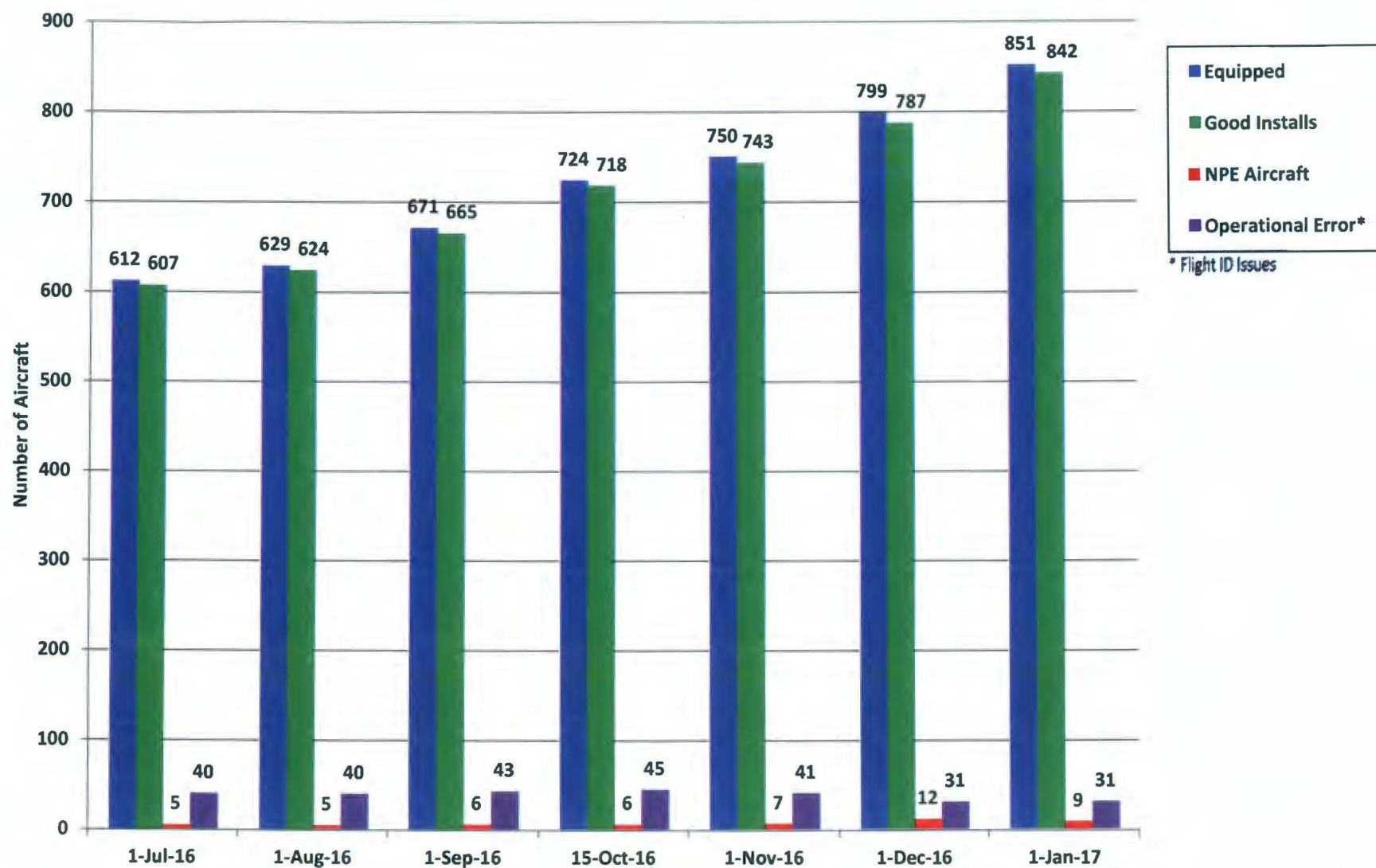
All US Aircraft Equipage & Avionics Performance



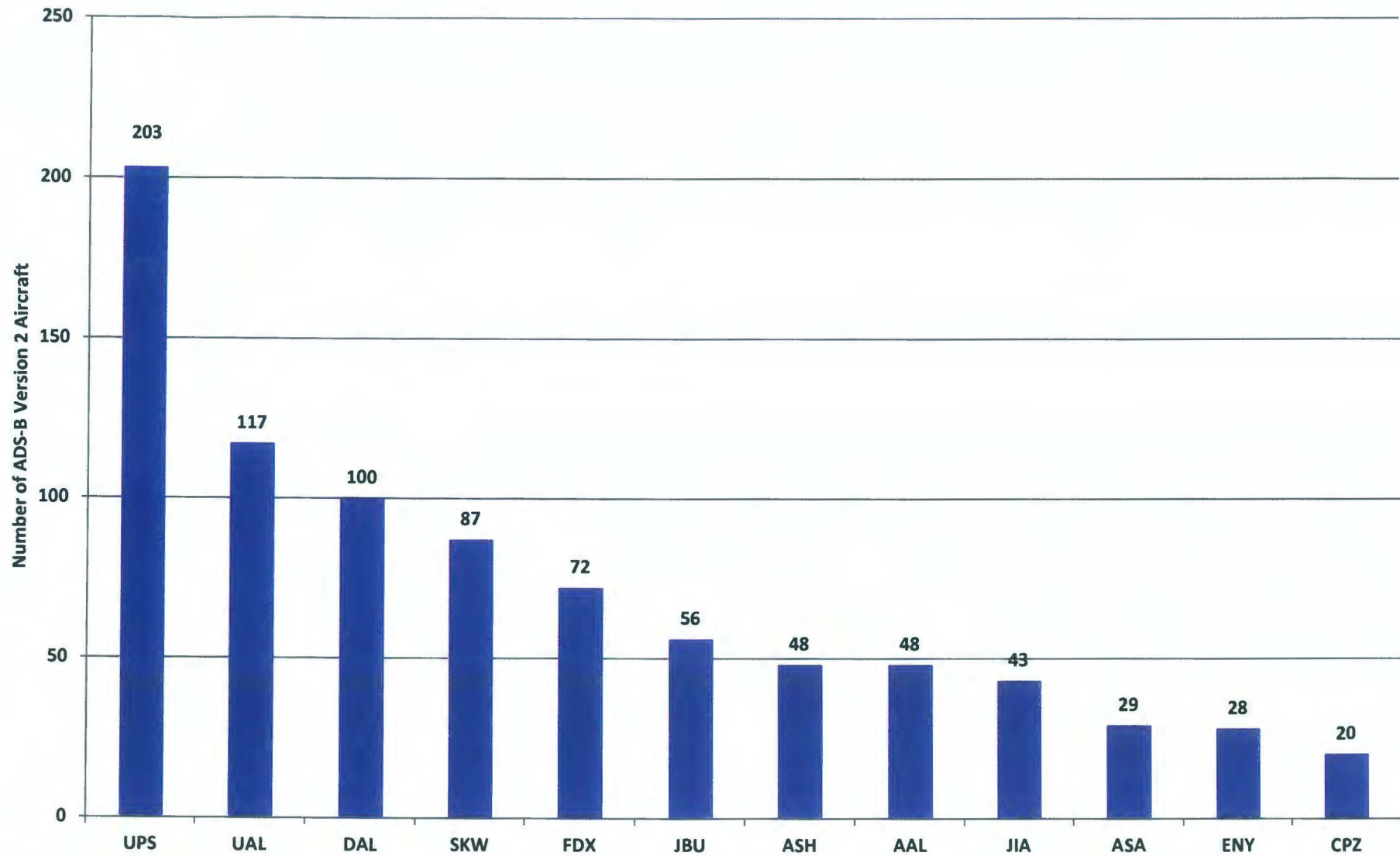
US GA Fixed-Wing Equipage and Avionics Performance



US Air Carrier Equipage & Avionics Performance



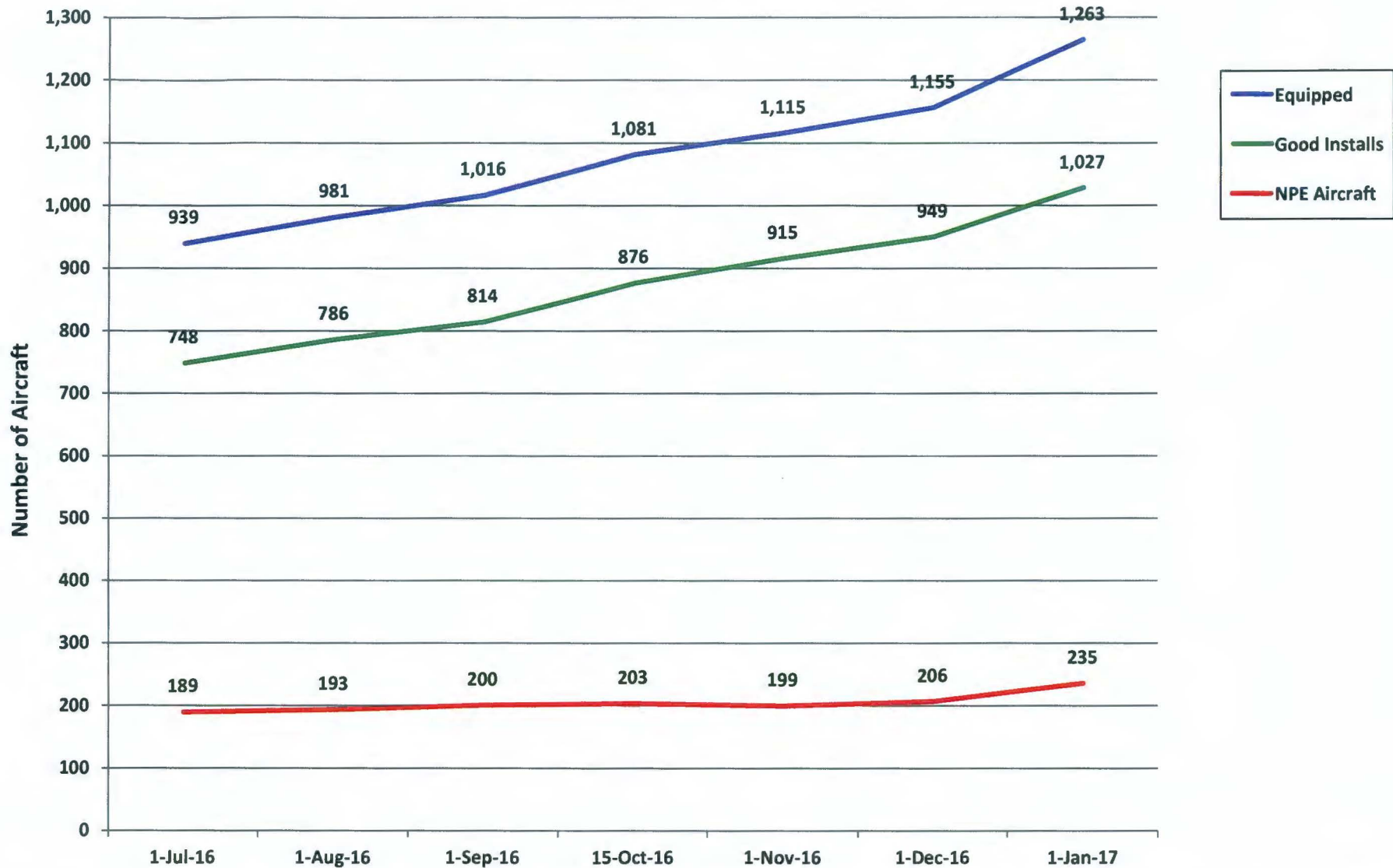
Equipage Status - U.S. Air Carrier Jan 1, 2017



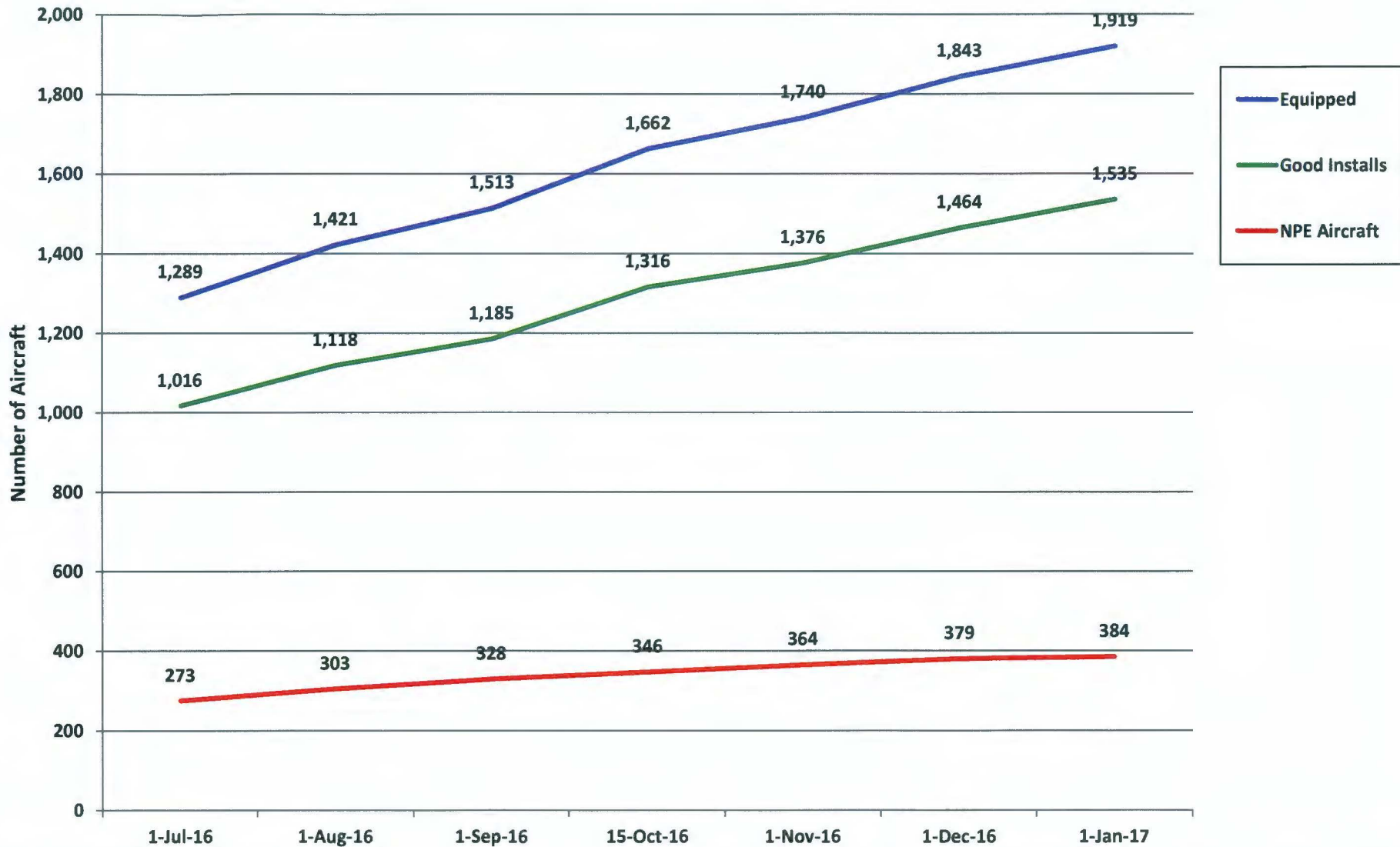
USA Exp and LSA Aircraft Equipage and Avionics Performance



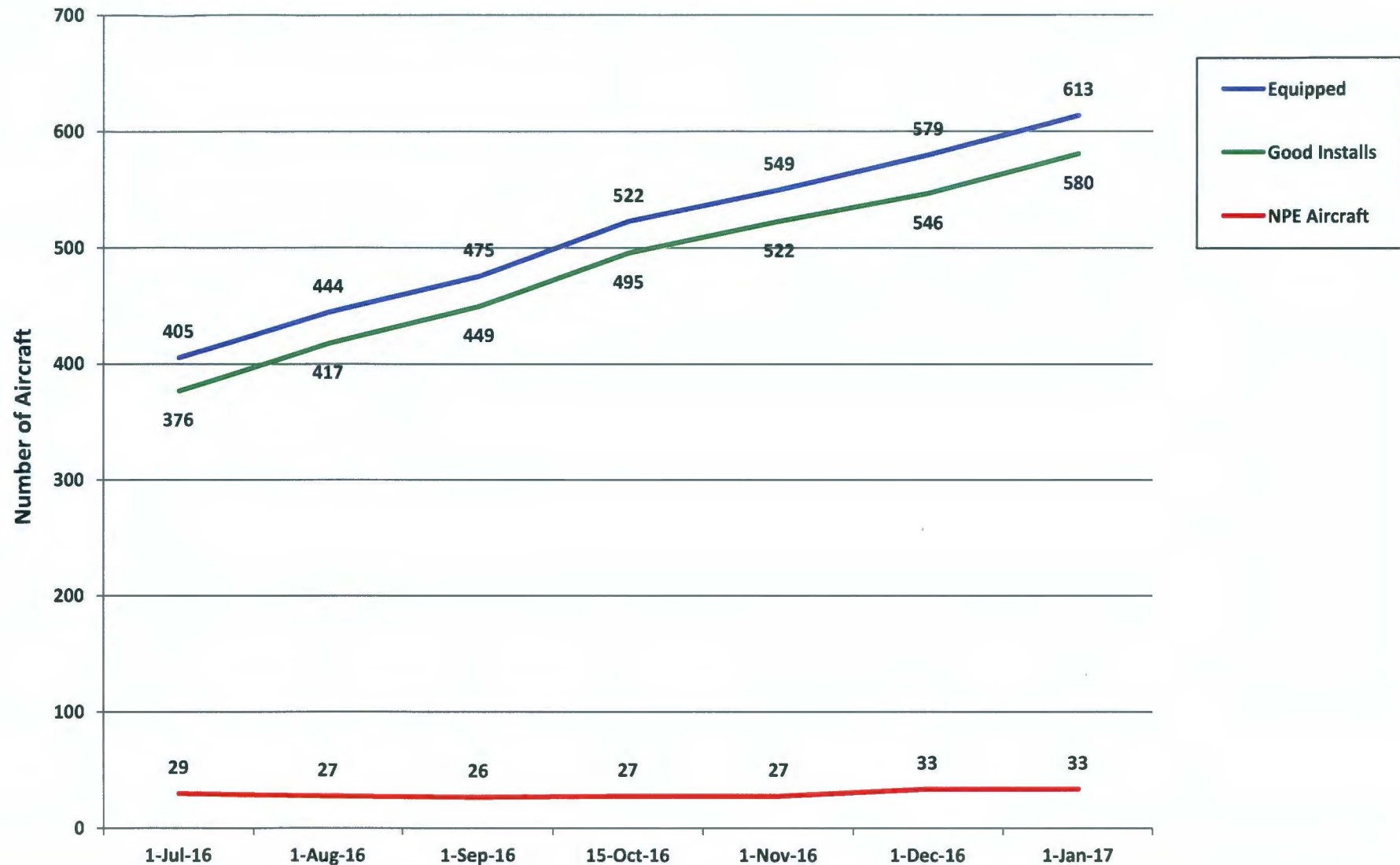
US Rotorcraft Equipage & Avionics Performance



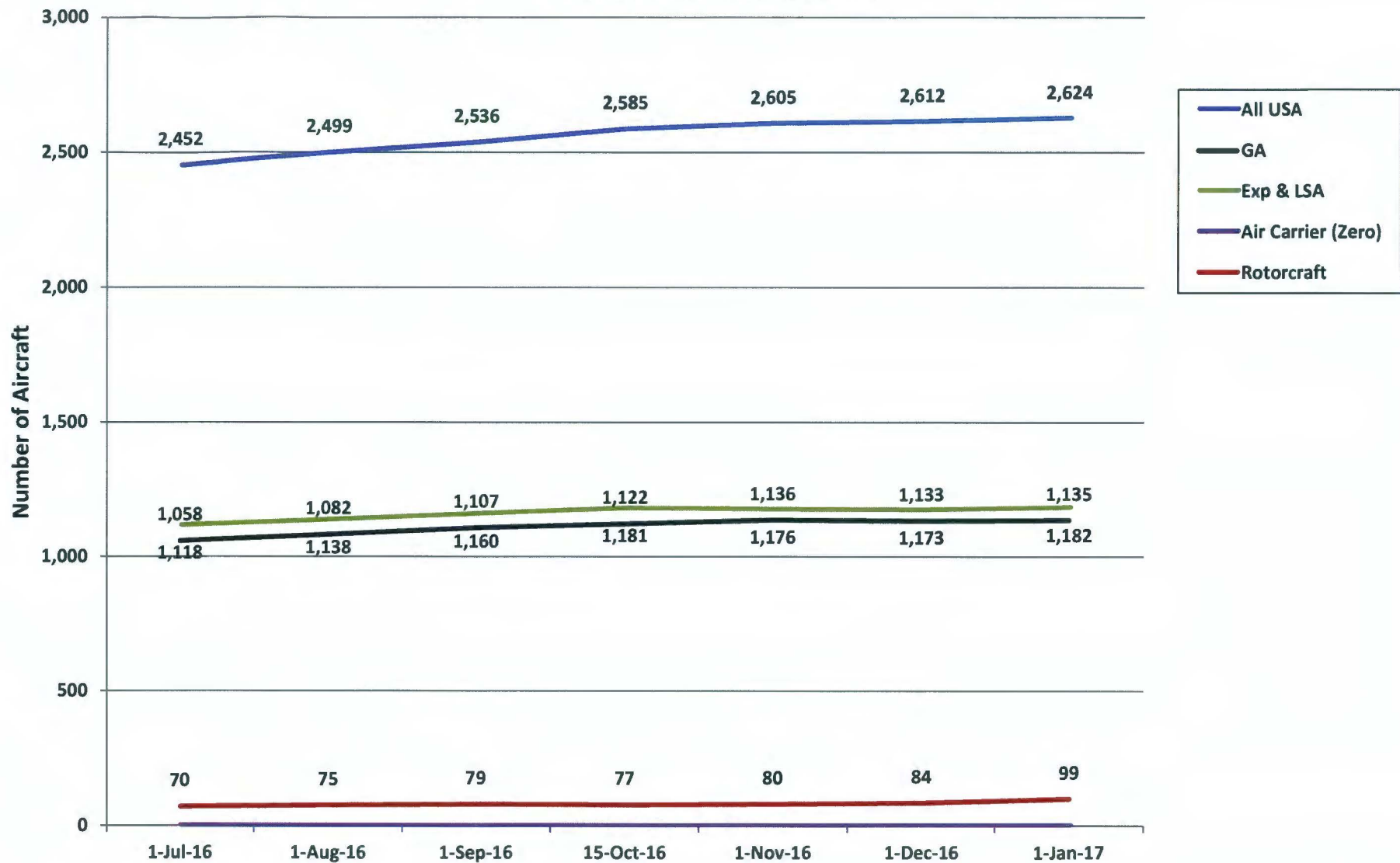
International GA Equipage & Avionics Performance



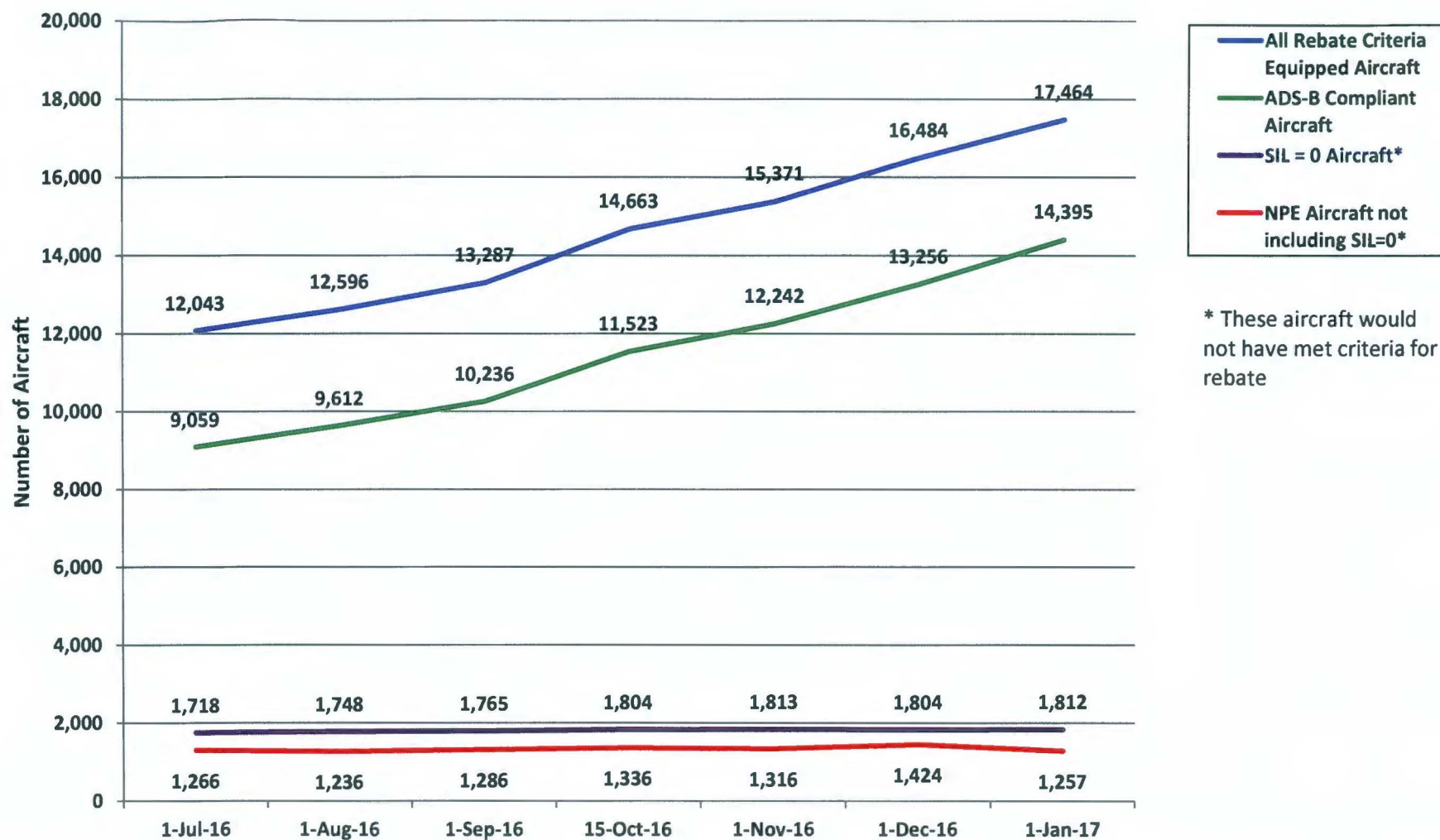
International Air Carrier Aircraft Equipage and Avionics Performance



US Aircraft with SIL = 0



US Fixed-Wing Single-Engine (rebate) Aircraft Equipage & Performance





**Federal Aviation
Administration**

Equip 2020

ADS-B Equipage & Avionics Performance Update

February 1, 2017



Feb 2017 Equipage Monitoring

V2 ADS-B Out equipped aircraft with compliant performance detected by FAA network

Category	As of 1-Jan-2017 (ATAT)	As of 1-Feb-2017 (ATAT)	Monthly Increase		% of estimated fleet equipped^, as of 1-Feb-2017
All Link Version 2	23,566	24,859	1,293	5.49%	
1090ES	17,648	18,828	1,180	6.69%	
UAT	5,079	5,074	-5	-0.10%	
Dual	838	957	119	14.20%	
US General Aviation (includes EXP & LSA)	19,517	20,702	1,185	6.07%	12.9% - 20.7%
US Air Carrier	842	878	36	4.28%	14.6% - 17.6%
Intl General Aviation*	1,535	1,588	53	3.45%	
Intl Air Carrier	580	594	14	2.41%	
U.S. Military & U.S. Special Use	29	27	-2	-6.90%	

<http://www.faa.gov/nextgen/equipadsb/equipment/monitoring/>

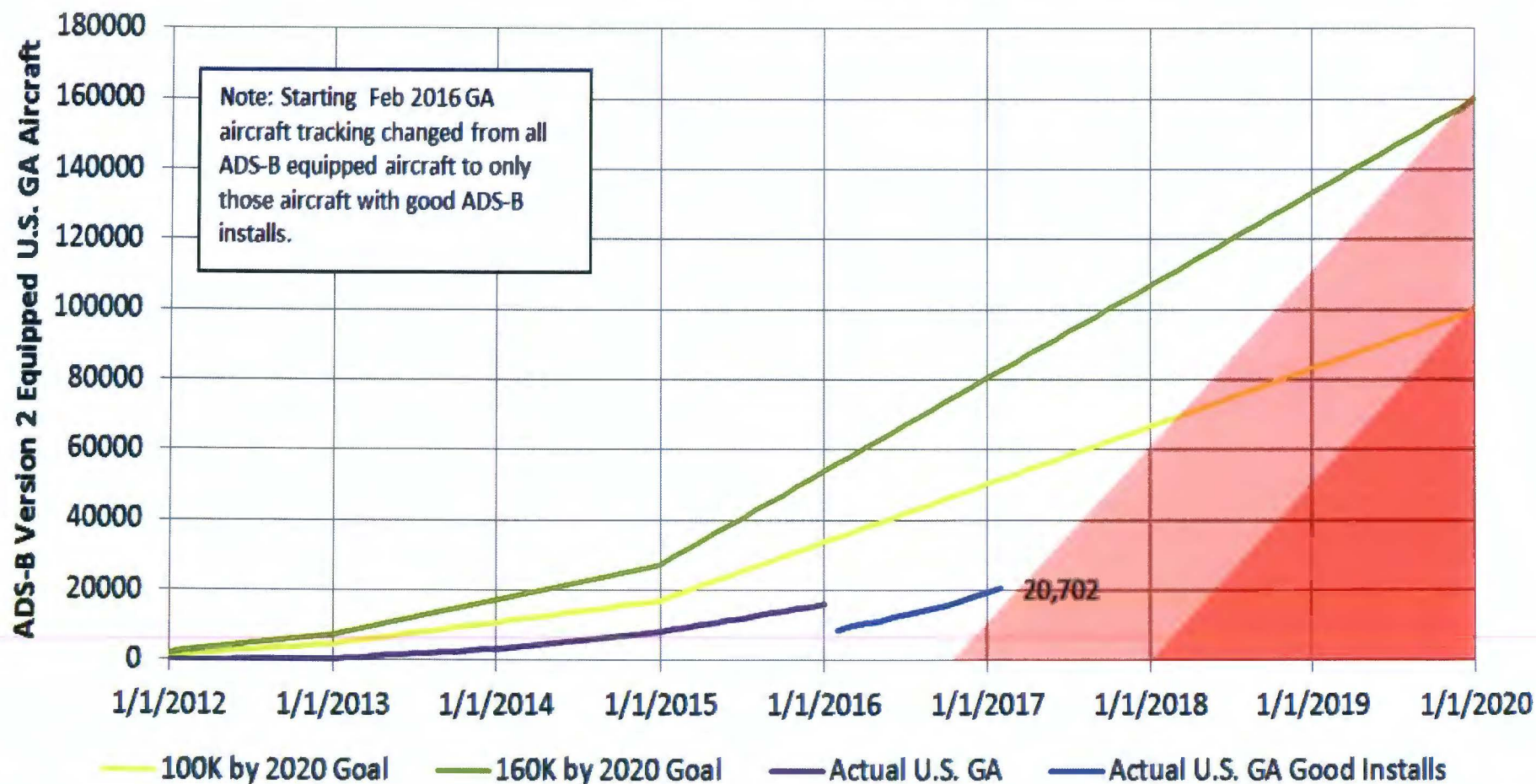
*Aircraft incorrectly reporting outside US ICAO block are included in Intl GA count.

^percentage range based on estimates of 5,000-6,000 US air carrier aircraft and 100K-160K US general aviation aircraft

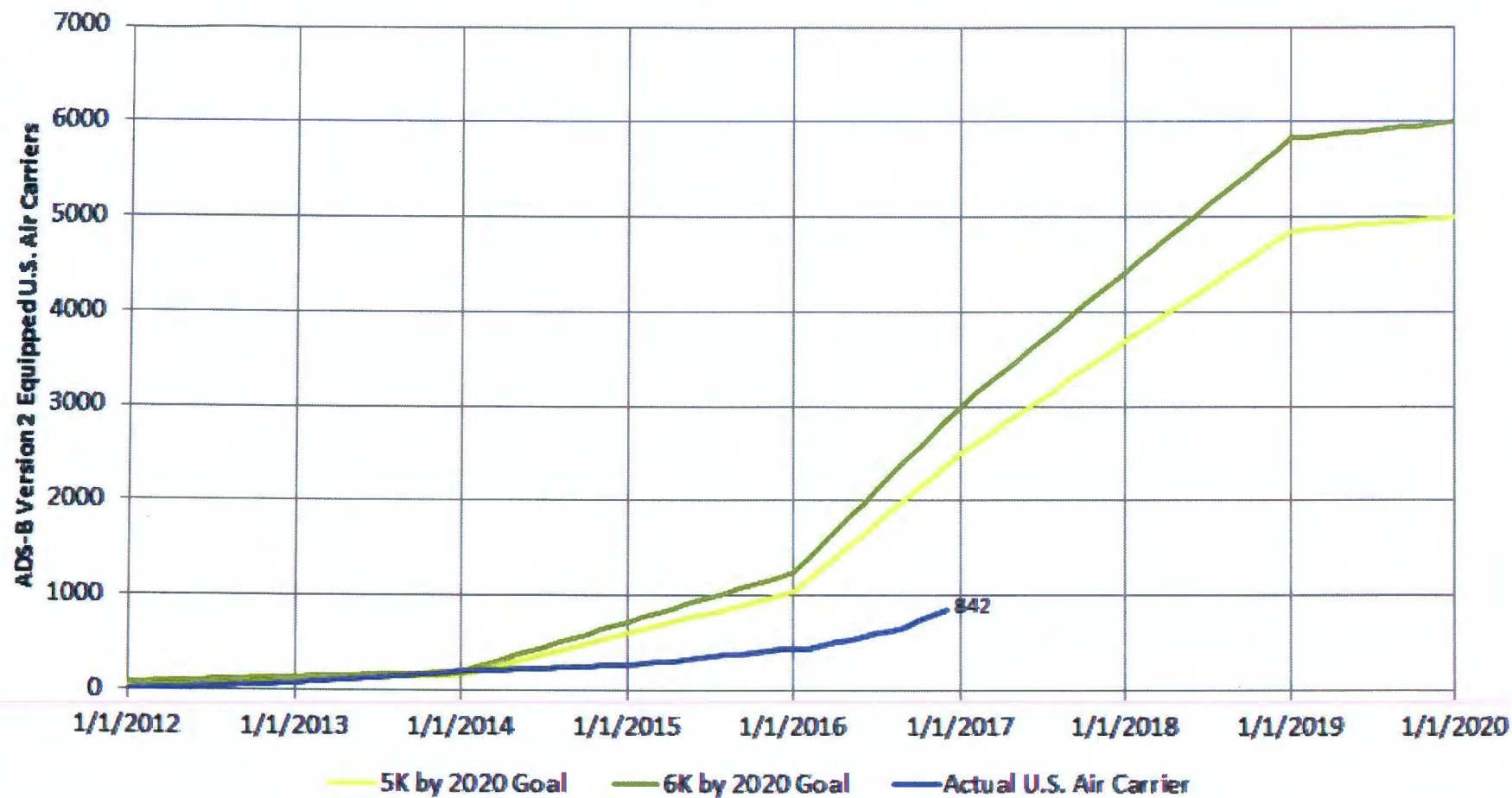
ATAT – The ATAT was used to generate these numbers starting on June 1, 2016



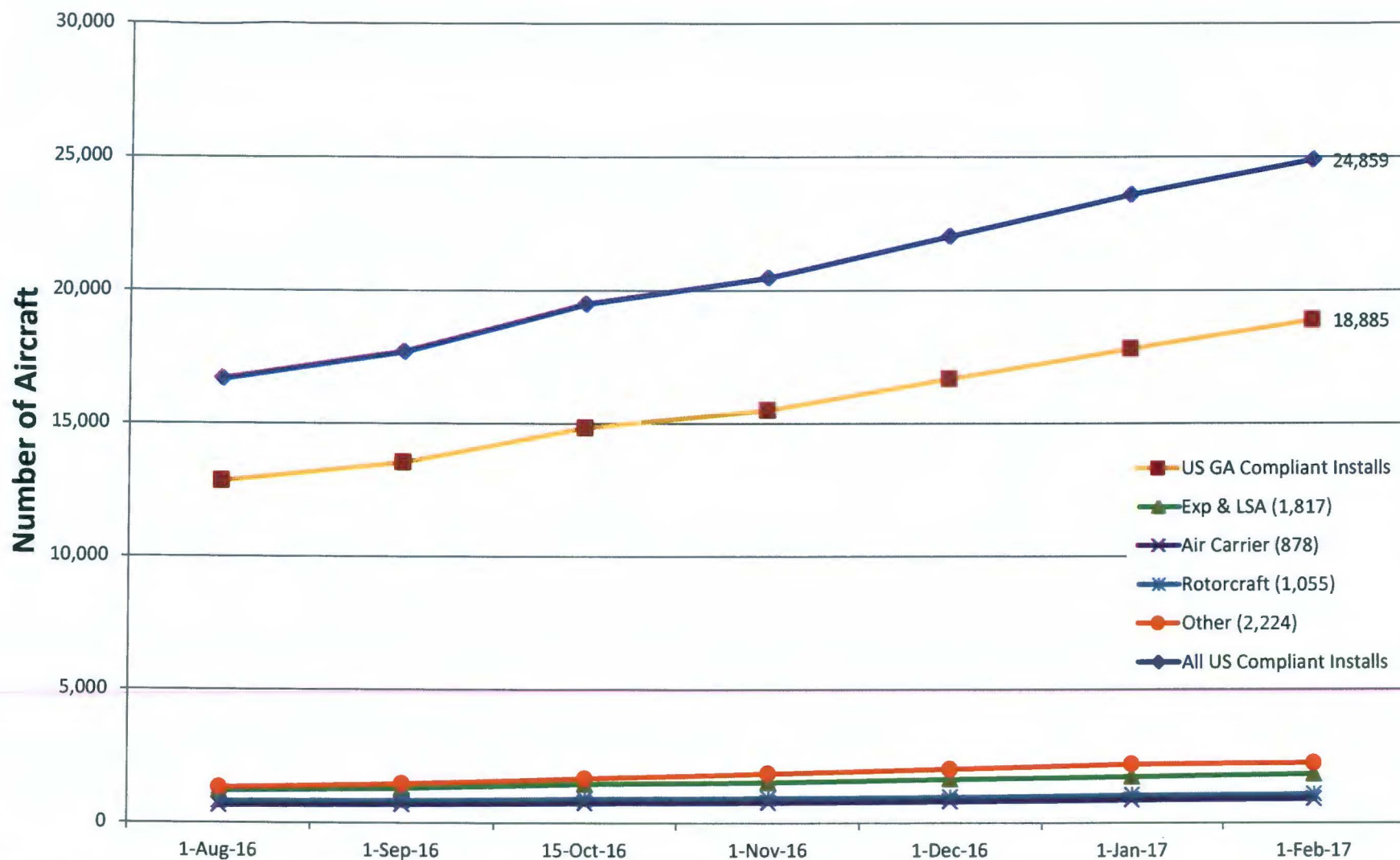
ADS-B Out Version 2 Equipage U.S. General Aviation (good installs) (including Exp & LSA aircraft) Actuals vs 100K and 160K by 2020 Goals



ADS-B Out Version 2 Equipage (good installs) U.S. Air Carriers Actuals vs 5K and 6K by 2020 Goals



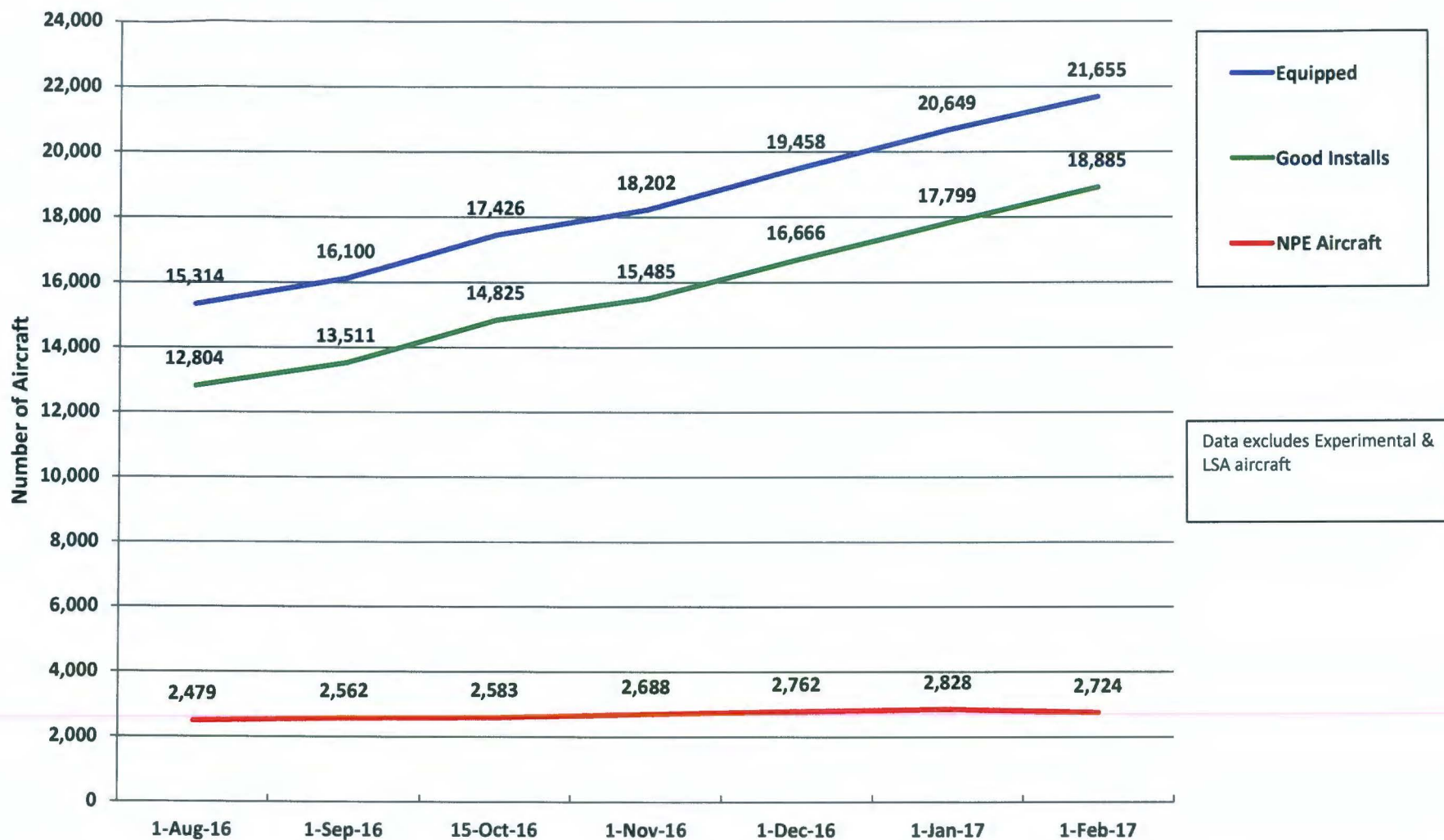
US ADS-B Compliant Install Breakdown



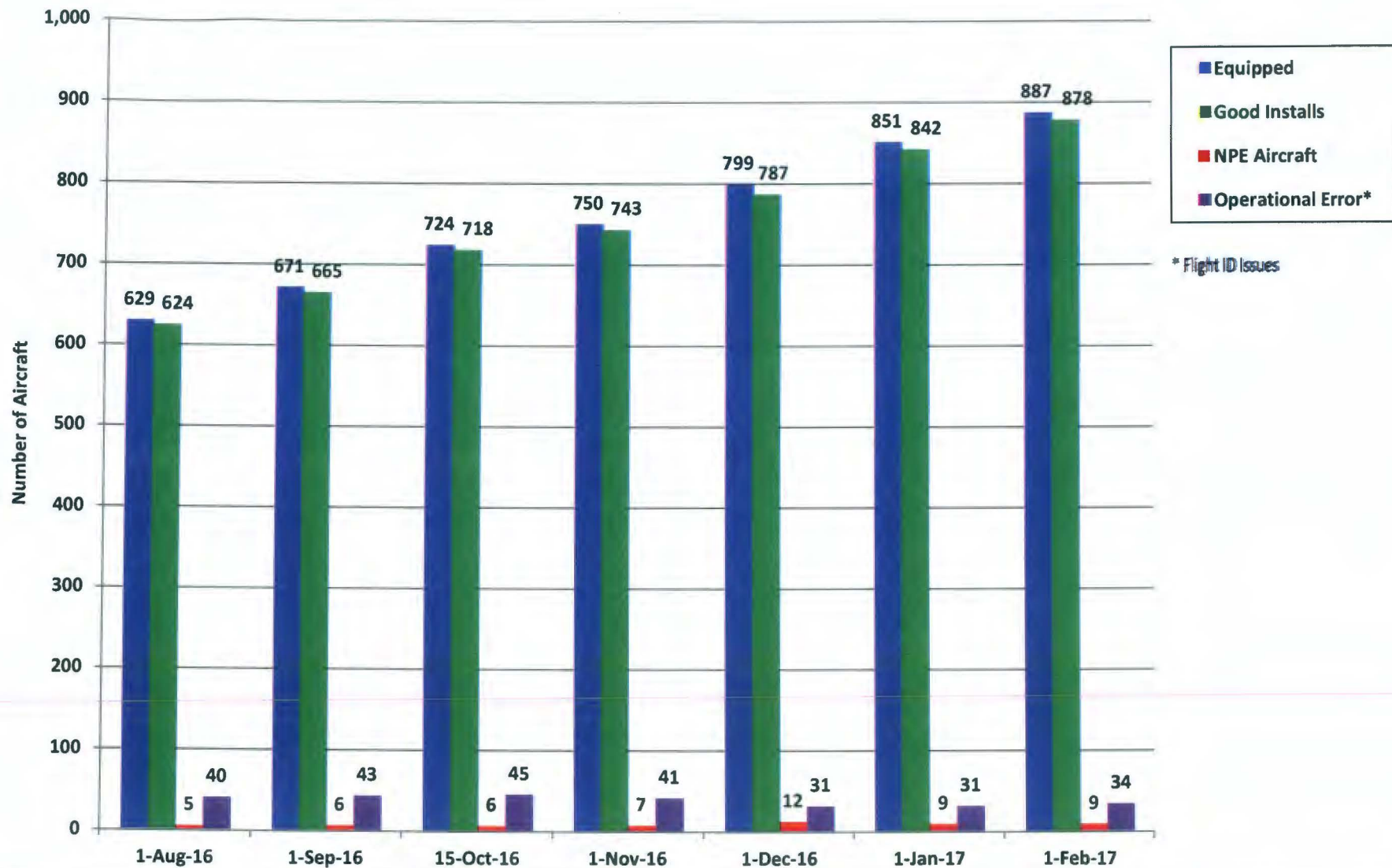
All US Aircraft Equipage & Avionics Performance



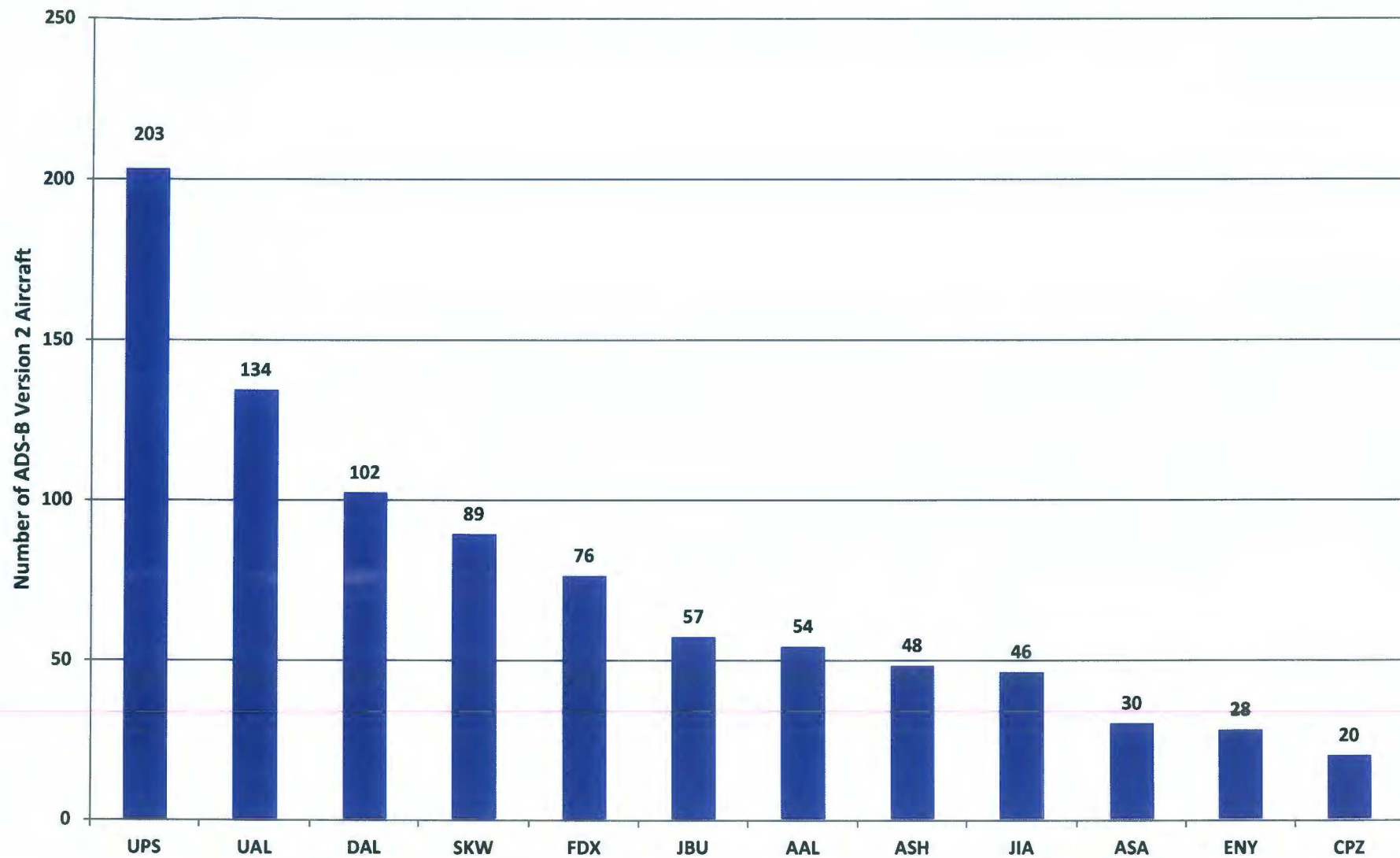
US GA Fixed-Wing Equipage and Avionics Performance



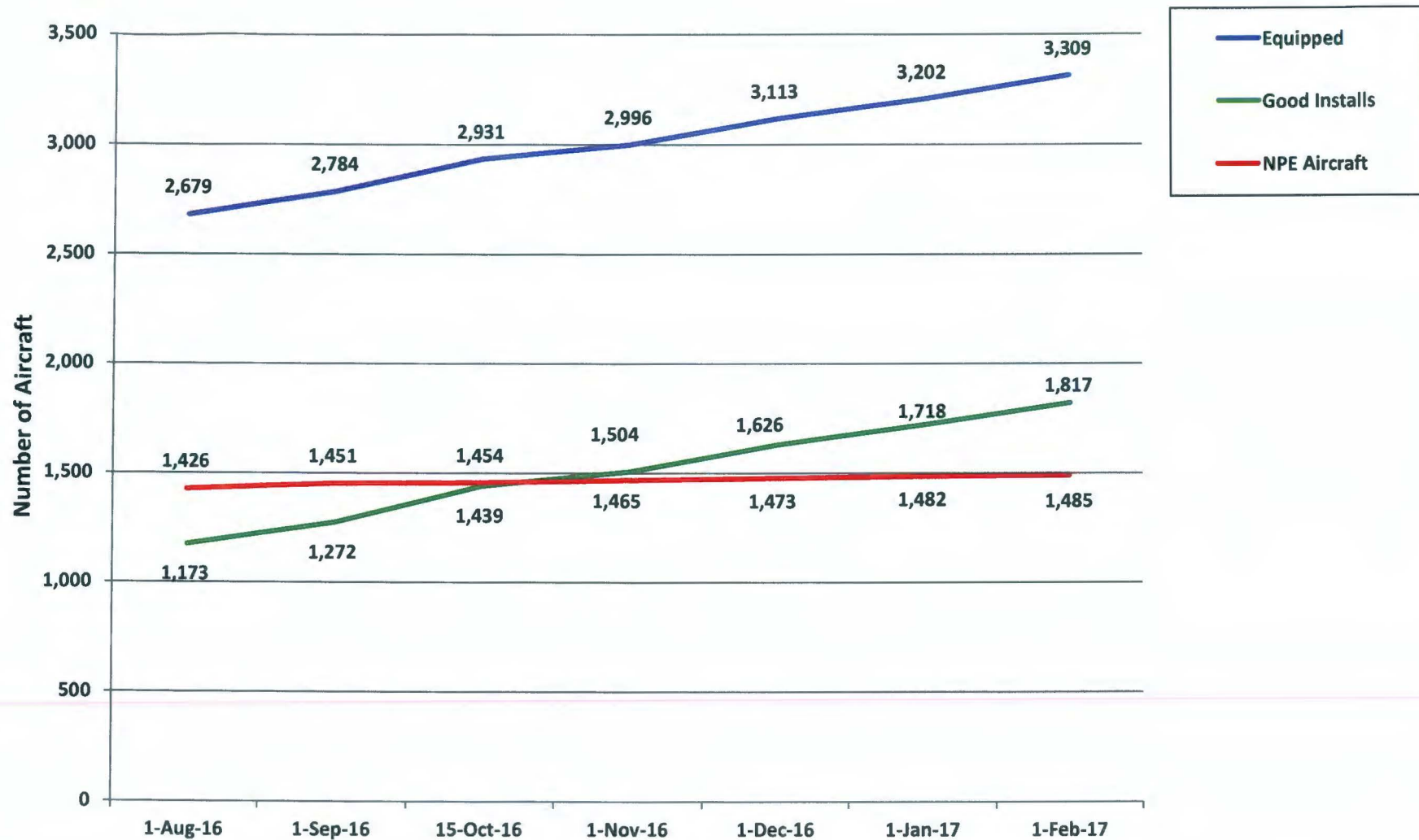
US Air Carrier Equipage & Avionics Performance



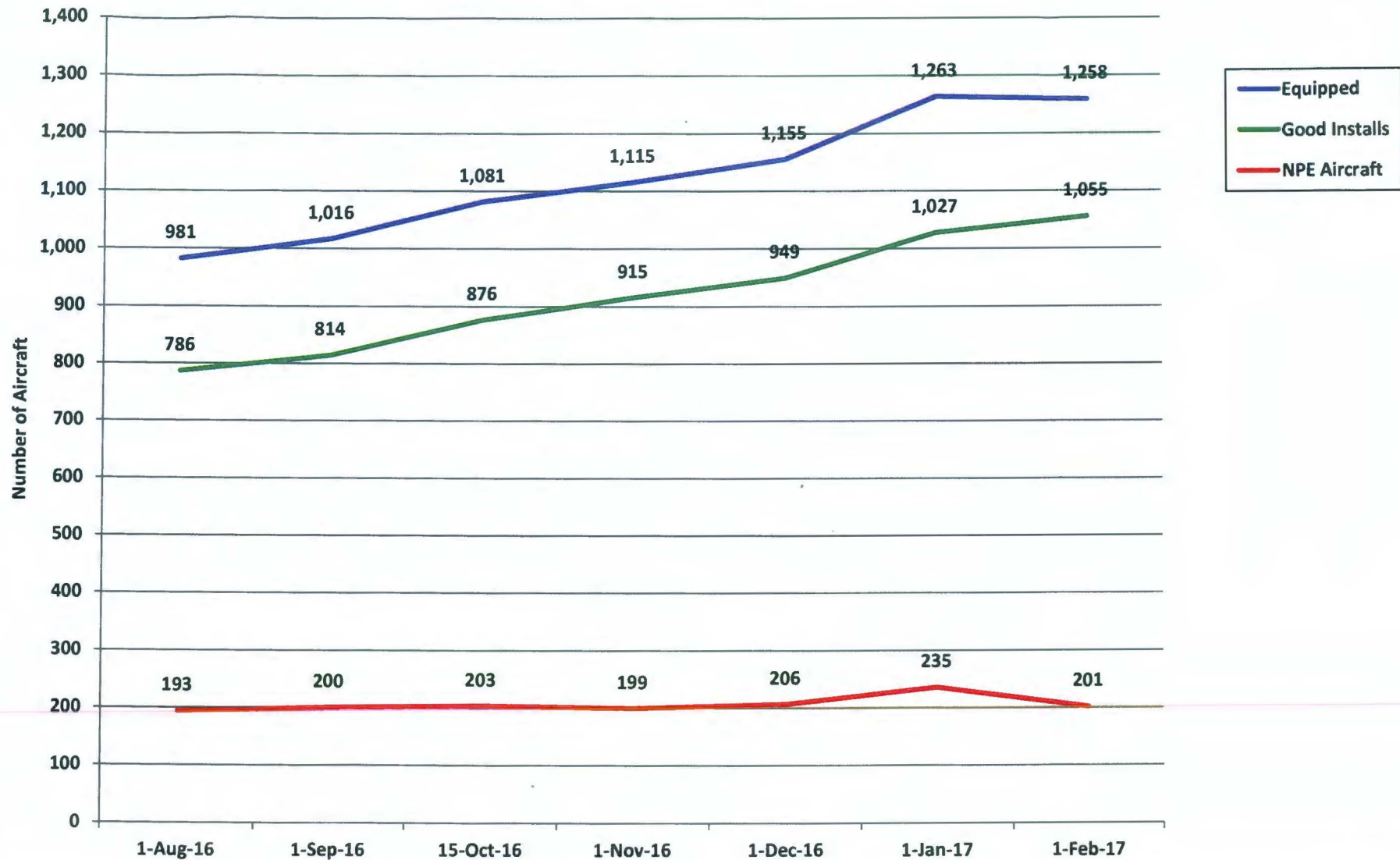
Equipage Status - U.S. Air Carrier Feb 1, 2017



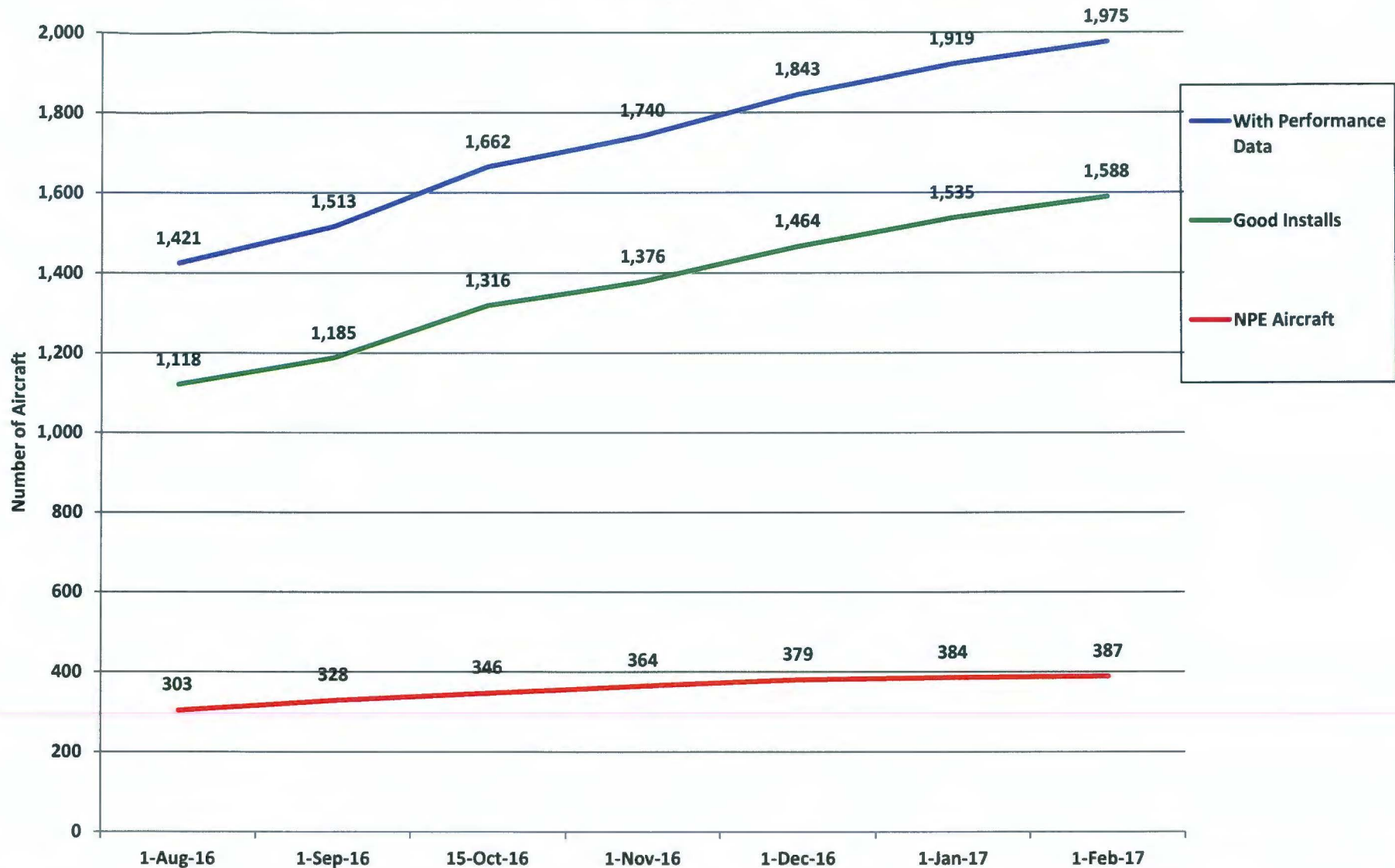
USA Exp and LSA Aircraft Equipage and Avionics Performance



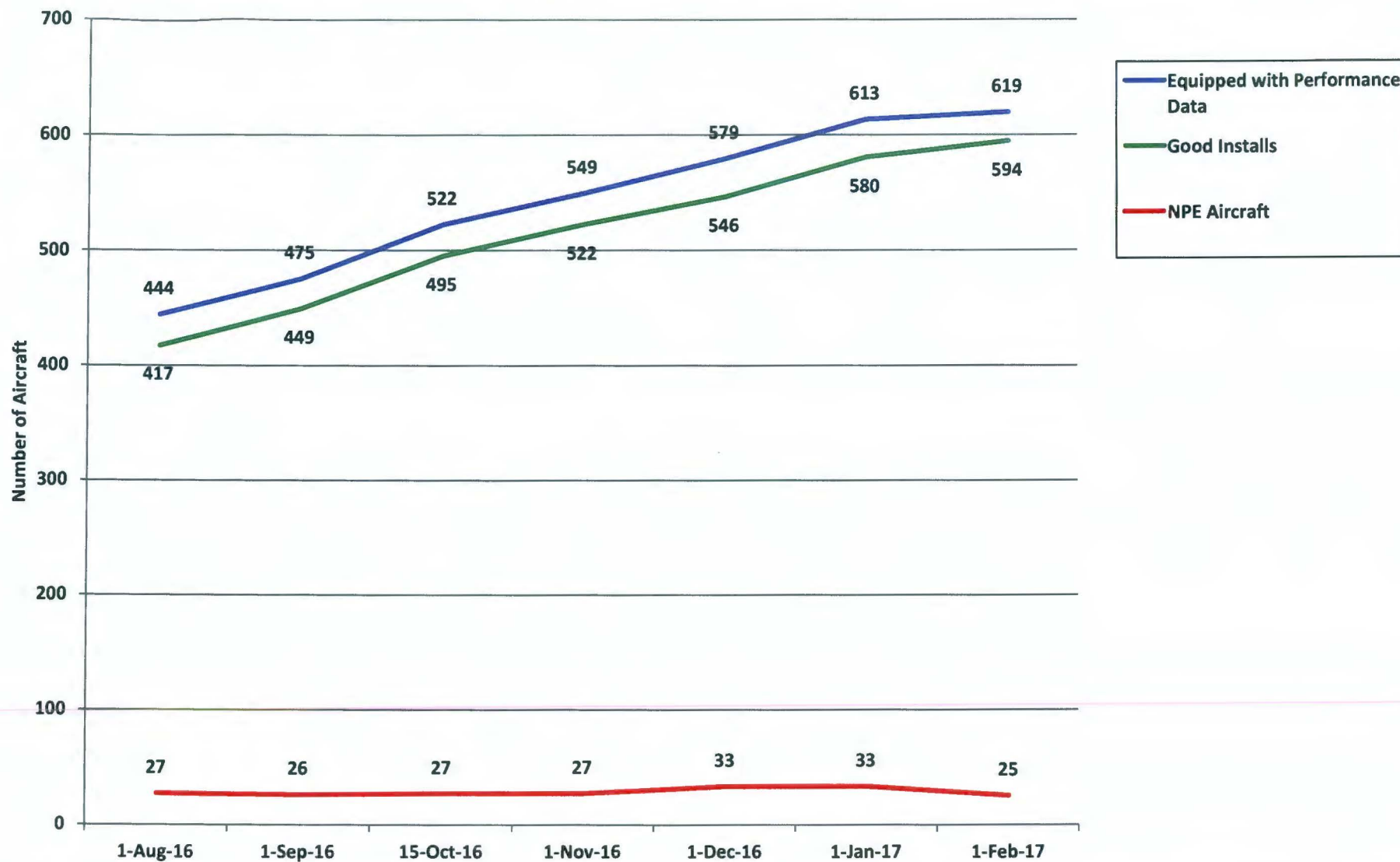
US Rotorcraft Equipage & Avionics Performance



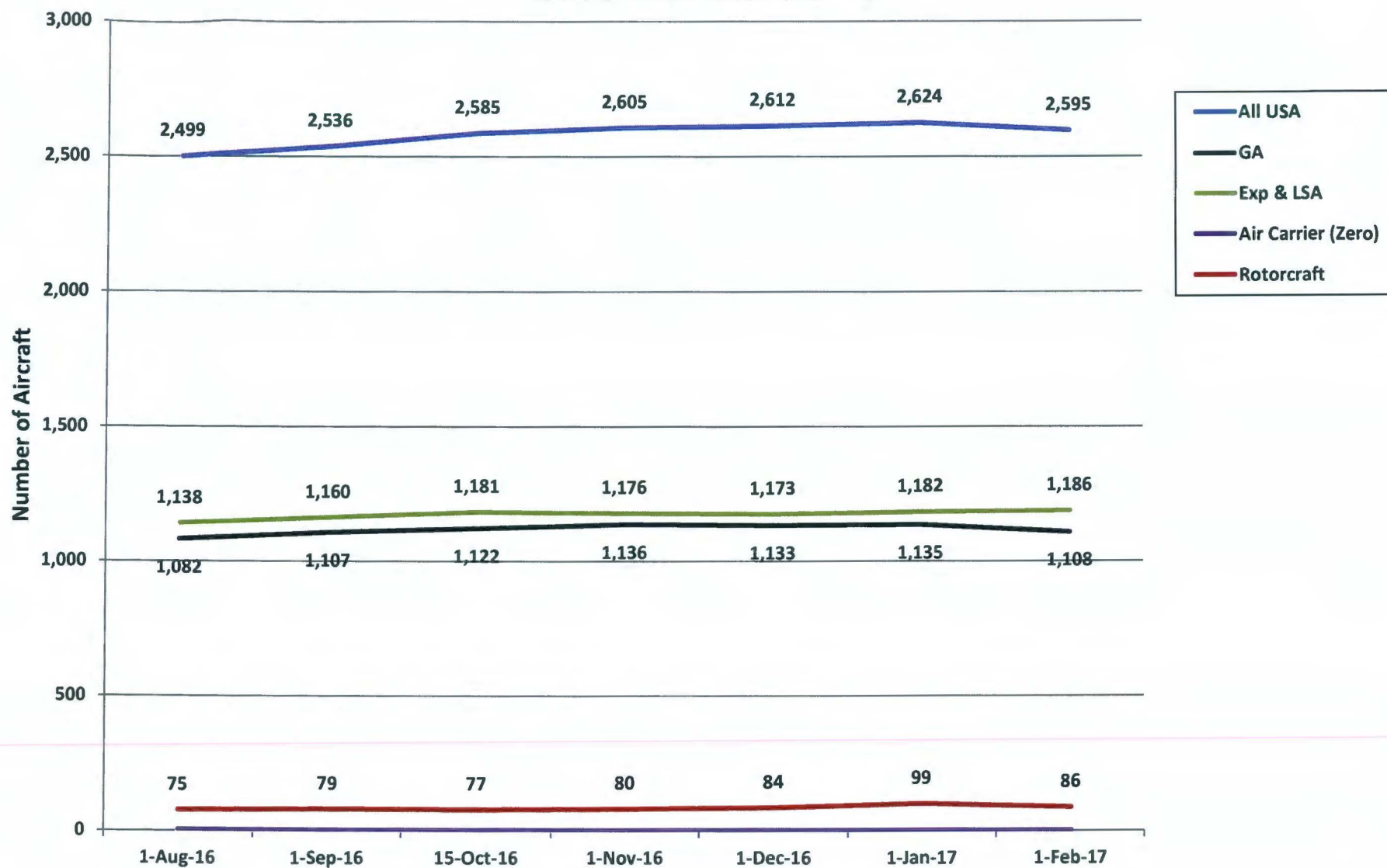
International GA Equipage & Avionics Performance



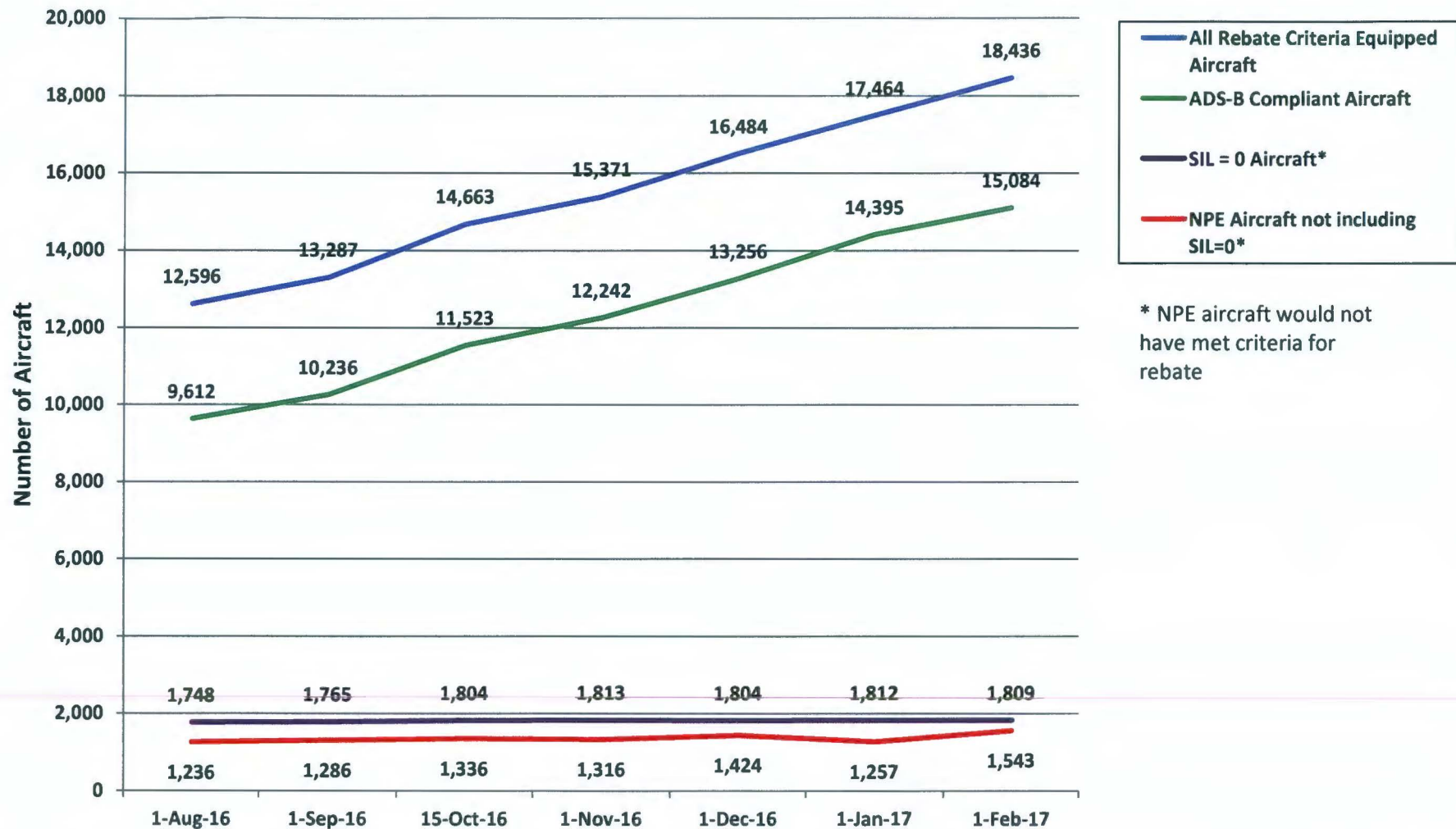
International Air Carrier Aircraft Equipage and Avionics Performance



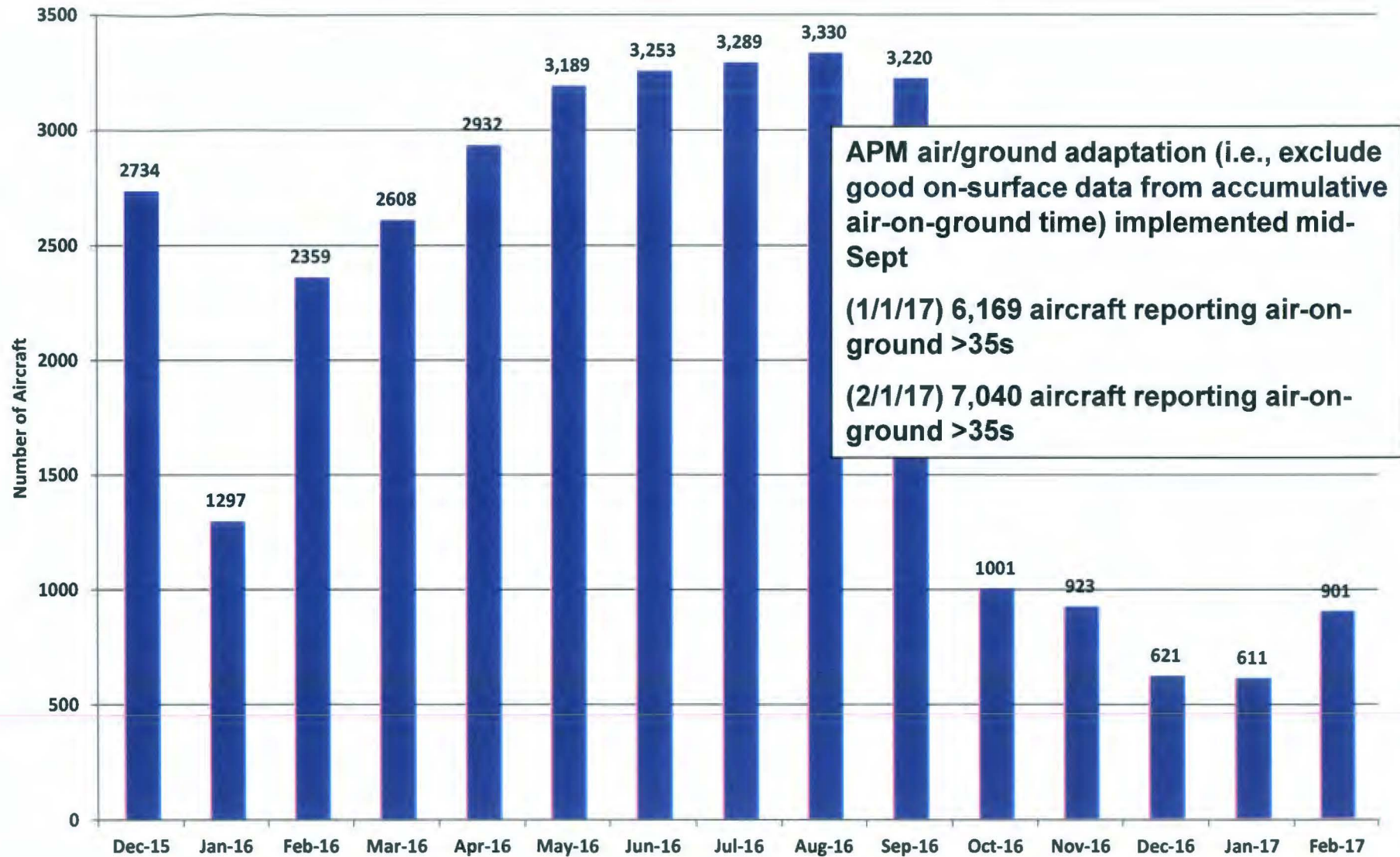
US Aircraft with SIL = 0



US Fixed-Wing Single-Engine (rebate) Aircraft Equipage & Performance



Number of Aircraft with Air-Ground Issues (>600s)



Next**GEN**

NextGen Priorities – Data Comm

Reporting Progress



FAA

Data Comm – Rolling Plan Milestones

- ✓ **Tower Services Waterfall – Q4 2016**
 - Completed challenge waterfall in December 2016
 - Proceeding forward to deliver services at additional towers
- ✓ **Implementation Framework for non-VDL Mode 2 Media – Q1 2017**
 - FAA and Industry developed implementation framework collaboratively
 - Briefed and received concurrence on the framework to Performance-based Aviation Rulemaking Committee (PARC) Communications Working Group (CWG) in August 2016
 - Briefed and received concurrence on the framework to joint FAA-Industry Data Comm Implementation Team (DCIT) and Data Comm NIWG Team in November 2016
 - Moving forward implementation of the framework
- **Initial Operating Capability (IOC) for Initial En Route Services at first Air Route Traffic Control Center (ARTCC) – Q3 2019**
 - Coordinating deployment strategies
 - Started development, integration and test of Data Comm Initial En Route Services
- **Airlines to equip 1,900 aircraft – Q4 2019**
 - 2,681 Data Comm equipped aircraft operating in the NAS as of February 6, 2017 (includes FANS/VDL Mode 2, FANS/VDL Mode 0, business jets, and international aircraft)
 - 1,137 aircraft have been equipped through the equiptage initiative



S1P1 Tower Service Additional Towers

Location	Source of Request	Major Carriers at Location
Southwest Florida International (RSW)	Service Area and Operator Requests	Southwest, Delta, American, JetBlue, United
Port Columbus International (CMH)	Operator Requests	Southwest, Delta, Republic Shuttle, American
Charleston International Airport (CHS)	Service Area Request	Alaska, American, JetBlue, Southwest, United, Military
Joint Base Andrews (ADW)	USAF/DoD	Military
Buffalo Niagara International (BUF)	Site Request	Southwest JetBlue, Delta, American, Endeavor
Reno-Tahoe International (RNO)	Site Request and NIWG/Operator Requests	Southwest, American, Horizon Air, United, Delta
Van Nuys (VNY)	NBAA Request	General Aviation

Key

Existing PDC Facility, Upgrading to DCL

No PDC Today, Upgrading to PDC and DCL



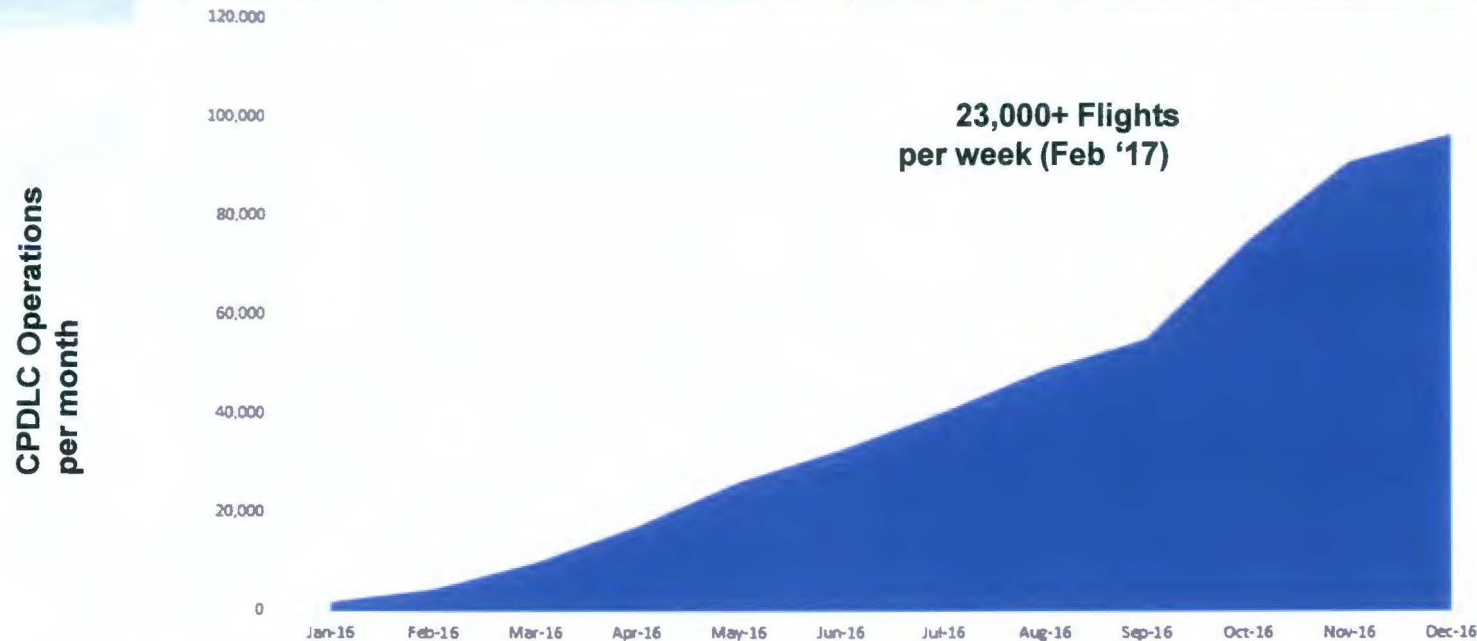
Data Comm - Equipage Status

DATA COMM AIRCRAFT



- **2,681 Data Comm equipped aircraft operating in the NAS as of February 6, 2017**
 - Includes FANS/VDL-2, FANS/POA, business jets, and international aircraft
- **1,137 aircraft have been equipped through the Data Comm equipage initiative**

S1P1 Tower Service - Operational Summary



10 US Mainline Air Carriers



41 Aircraft Types



25 International Air Carriers



Business Jet Operators



S1P1 Tower Service Benefits - 2016

- 62.3M passengers benefitted from DCL
- 466,833 flights received a Data Comm Clearance
- Average of 6 minutes of taxi time savings during major weather events
- Average of 11 minutes of pushback delay savings during major weather events
- The table below shows a sample of weather events resulting in time savings benefits for Data Comm flights

Day	Site	Length (hrs)	Time Savings per Flight (Data Comm vs. Non-Data Comm revisions)	Total Time Saved
2/15/16	EWR	7.5	Average 23.7 min less gate delay and 5 min taxi delay	195.3 minutes
4/1/16	JFK	24	Average 9 min less gate delay and 7.8 min taxi delay	299 minutes
4/3/16	EWR	24	Average 16.3 min less gate delay and 11 min taxi delay	274 minutes
6/27/16	EWR	9.5	Average 21.5 min less gate delay and 5.3 min taxi delay	208 minutes
8/17/16	BWI	10.5	Average 24.3 min less gate delay and 5.8 min taxi delay	323.4 minutes
8/21/16	BWI	9	Average 26.5 min less gate delay and 9.1 min taxi delay	460.9 minutes



Data Comm – Risks

- **Air-to-Ground interoperability**
 - Issue resolution between air and ground systems
 - Latent avionics issues – Pegasus 1
- **Training**
 - Development and acceptance of training materials
 - Timing of training to support initial En Route operations
 - Operator flight crew training to support waterfall
- **Operator support for the En Route waterfall**
 - Equipped aircraft needed to support Data Comm ARTCC site IOCs
 - Support for FAA air-to-ground interoperability site testing
- **Integration and test of the component subsystems**
 - ERAM/TDLS/DCNS/FTI/Aircraft
- **Site coordination**
 - Coordination across multiple facilities and with operators to support transition to Data Comm En Route Initial CPDLC Services

Boeing Aircraft with Pegasus 1 FMS

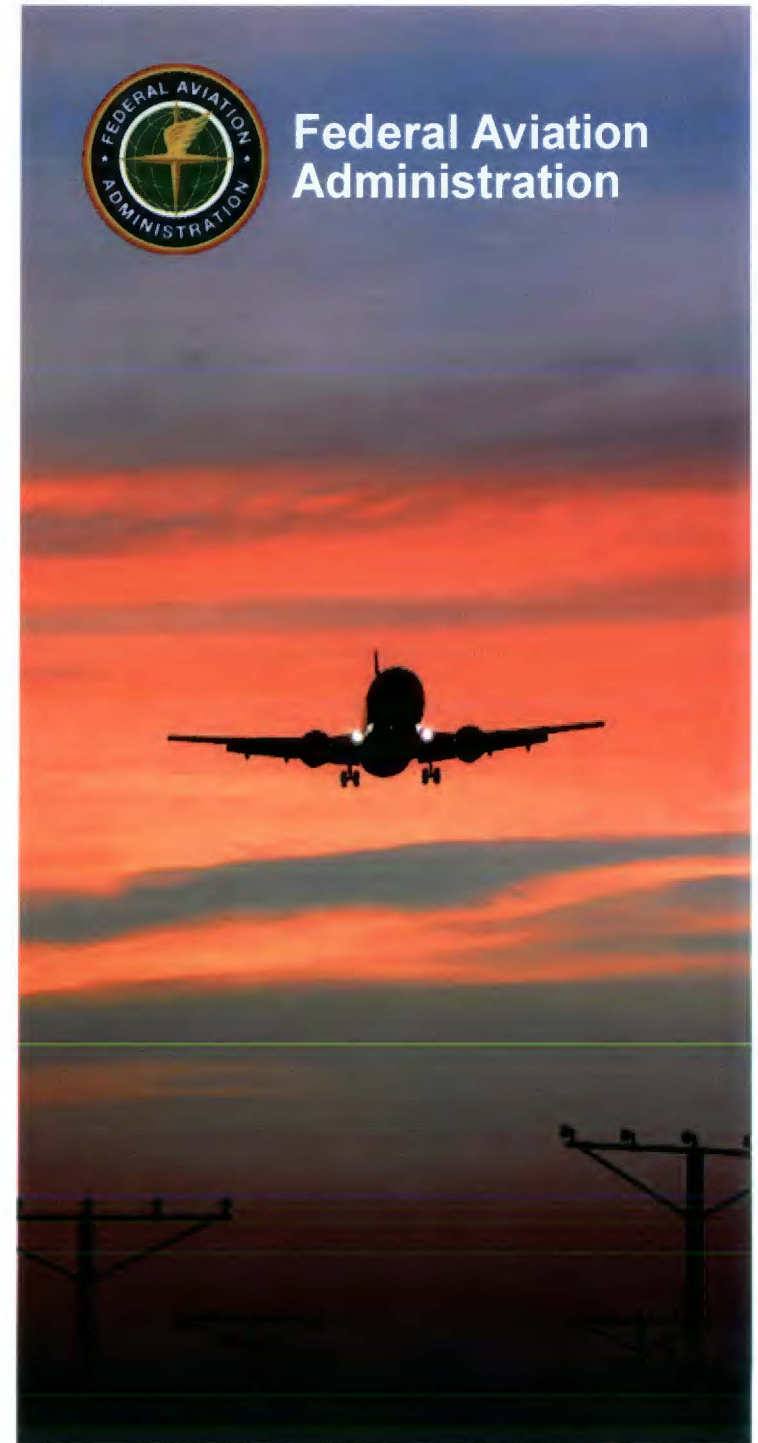
- **Pegasus 1 contains bugs impacting FANS 1/A Controller Pilot Data Communications (CPDLC)**
 - Pegasus 1 unable to load routes for 2 out of 3 route messages (UM80 & UM83)
 - Messages (randomly) re-displayed from previous CPDLC session
 - Incorrectly loads routes that contain an airway-to-airway with no published waypoint
 - Printer does not correctly output route clearance
- **Impact:**
 - 771 US registered B757 & B767 Pegasus aircraft will not be able to receive re-route in en route airspace
- **Mitigations:**
 - Upgrade to Pegasus 2 – requires hardware and software upgrade
 - Pegasus 1 fix (Airline preferred solution)
 - Investigating potential ground mitigation options
- **Next Steps:**
 - Aircraft operators with B757 & B767 need reaching out to Boeing to push for a Pegasus 1 software fix



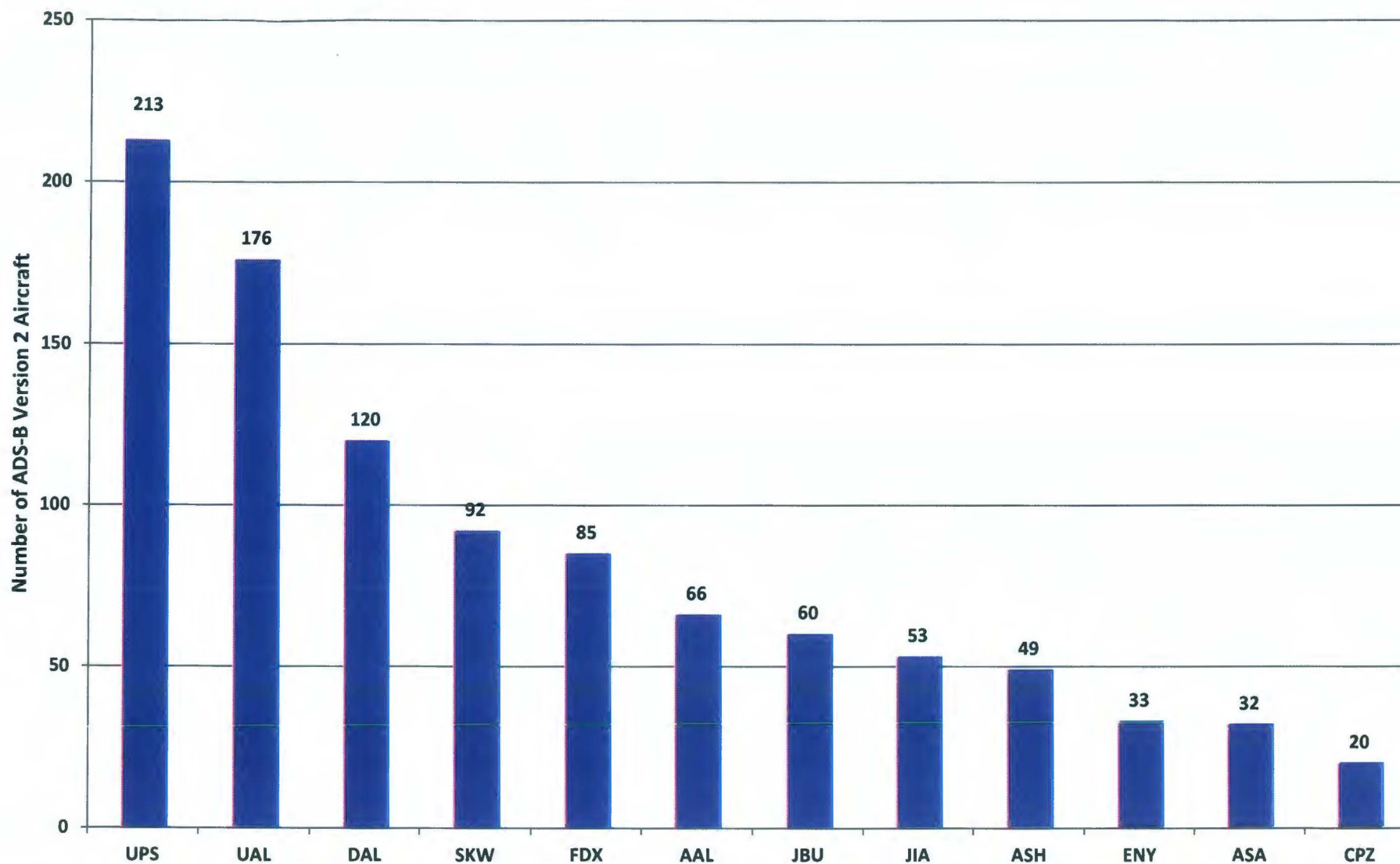
Equip 2020 FAA Update

Bruce DeCleene, Flight Standards Service

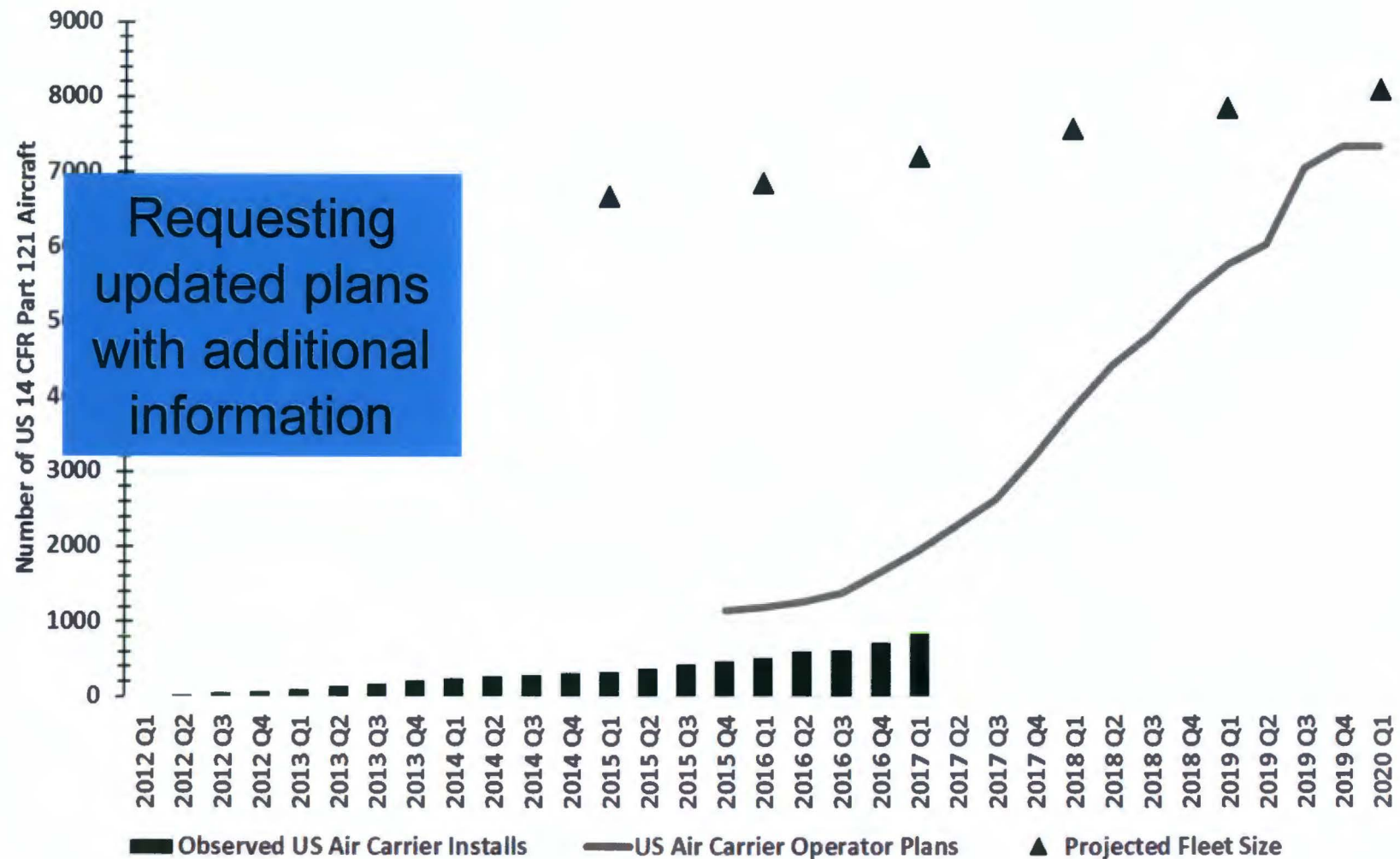
Date: April 18, 2017



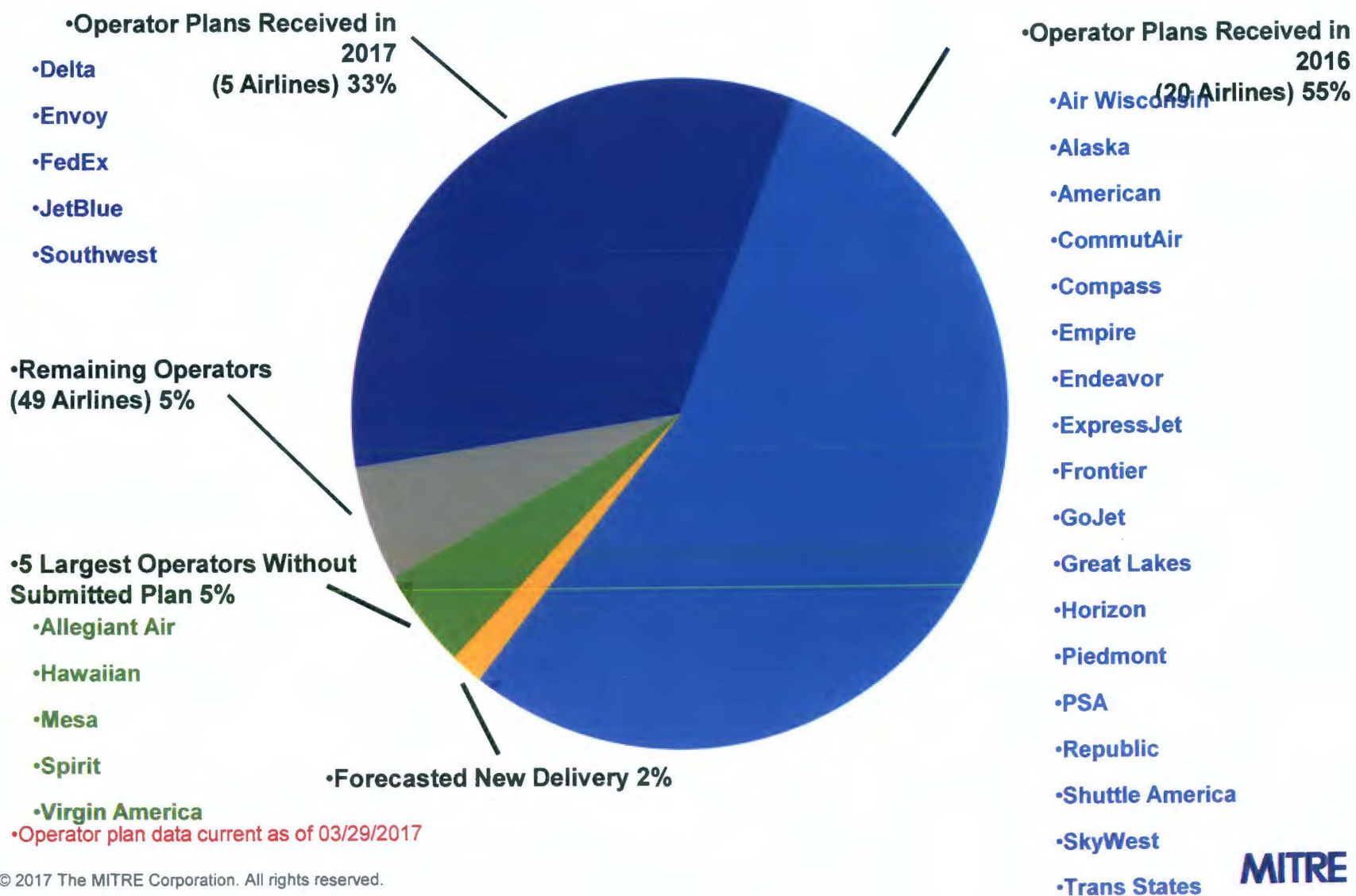
Equipage Status - U.S. Air Carrier April 1, 2017



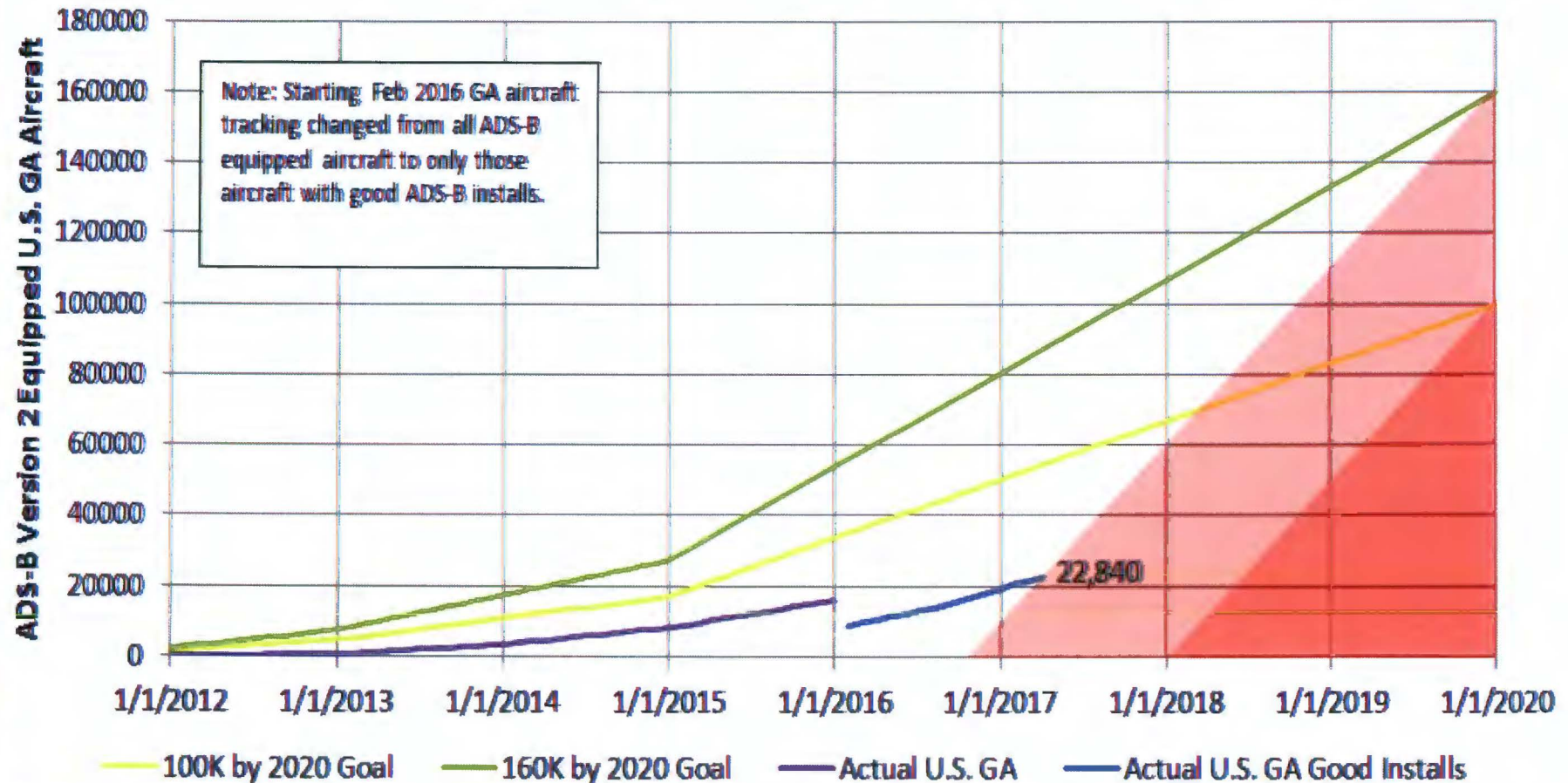
US Air Carrier Operator Installation Plans and Observed Installs



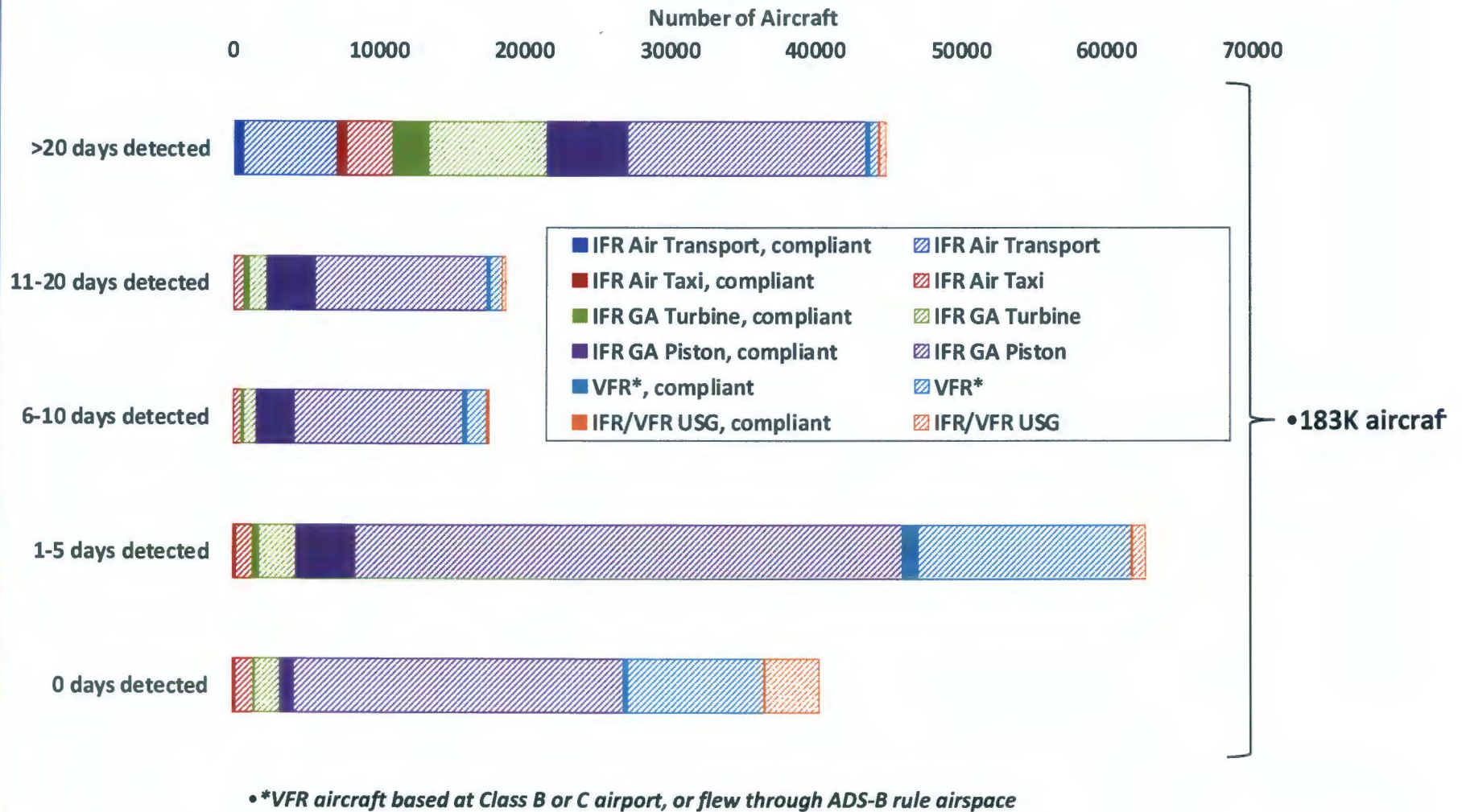
US 14 CFR Part 121 Operator ADS-B Out Equipage Plans Mapped to FAA Forecasted 2020 Fleet



ADS-B Out Version 2 Equipage U.S. General Aviation (good installs) (including Exp & LSA aircraft) Actuals vs 100K and 160K by 2020 Goals



Aircraft Expected to Equip for ADS-B Out Rule Grouped by Days Detected in Rule Airspace in CY2016



Detailed Information



Federal Aviation
Administration

April 2017 Equipage Monitoring

V2 ADS-B Out equipped aircraft with compliant performance detected by FAA network

Category	As of 1-March-2017 (ATAT)	As of 31-March-2017 (ATAT)	Monthly Increase		% of estimated fleet equipped^, as of 1-March-2017
All Link Version 2	26,067	27,431	1,364	5.23%	
1090ES	20,092	21,385	1,293	6.44%	
UAT	5,134	5,191	57	1.11%	
Dual	841	855	14	1.66%	
US General Aviation (includes EXP & LSA)	21,679	22,840	1,161	5.36%	14.3% - 22.8%
US Air Carrier	934	987	53	5.67%	16.3% - 19.6%
Intl General Aviation*	1,695	1,743	48	2.83%	
Intl Air Carrier	613	630	17	2.77%	
U.S. Military & U.S. Special Use	30	29	-1	-3.33%	

• <http://www.faa.gov/nextgen/equipadsb/equipment/monitoring/>

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• ^percentage range based on estimates of 5,000-6,000 US air carrier aircraft and 100K-160K US general aviation aircraft

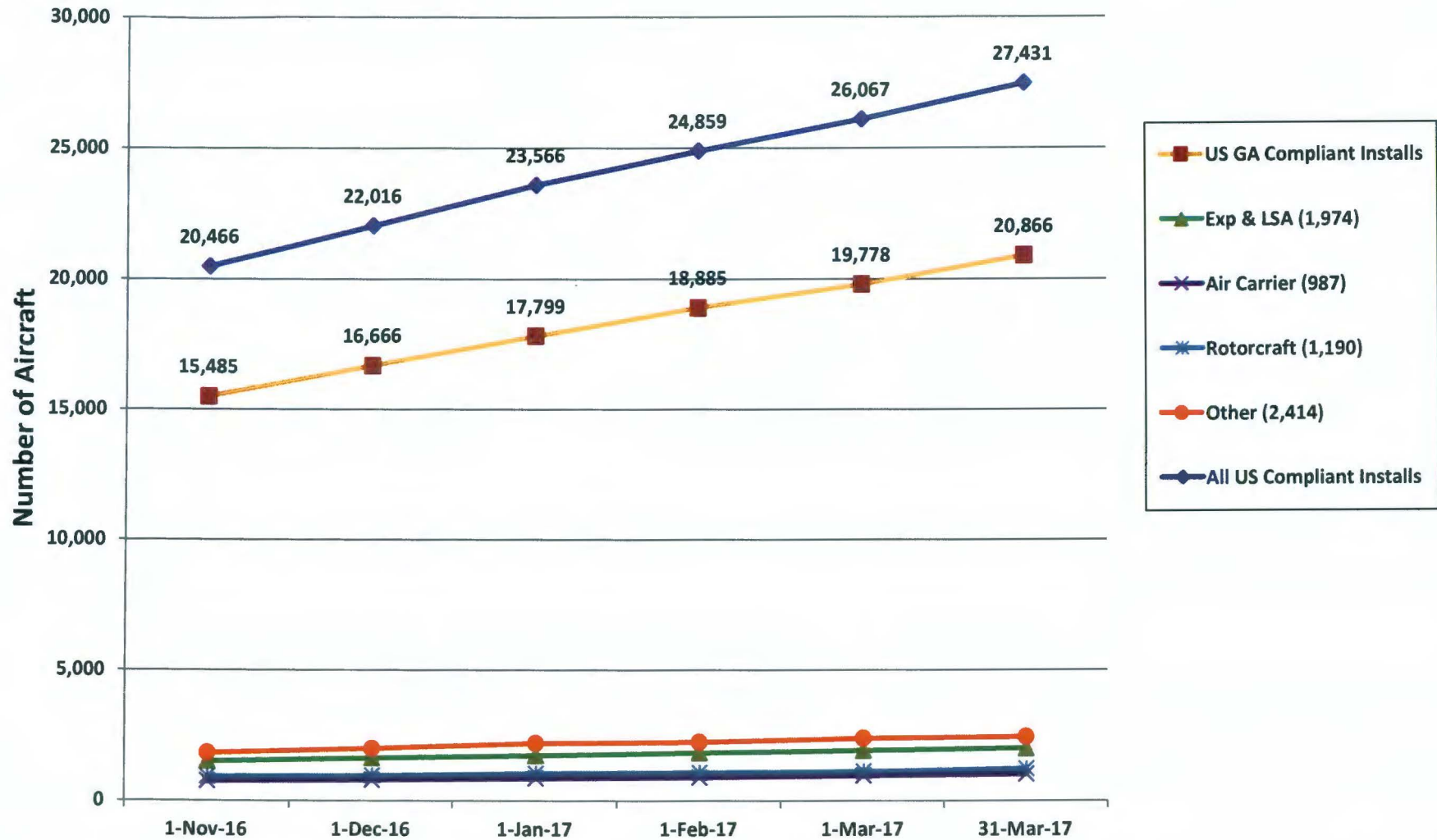


Federal Aviation
Administration

ADS-B Out Version 2 Equipage (good installs) U.S. Air Carriers Actuals vs 5K and 6K by 2020 Goals



US ADS-B Compliant Install



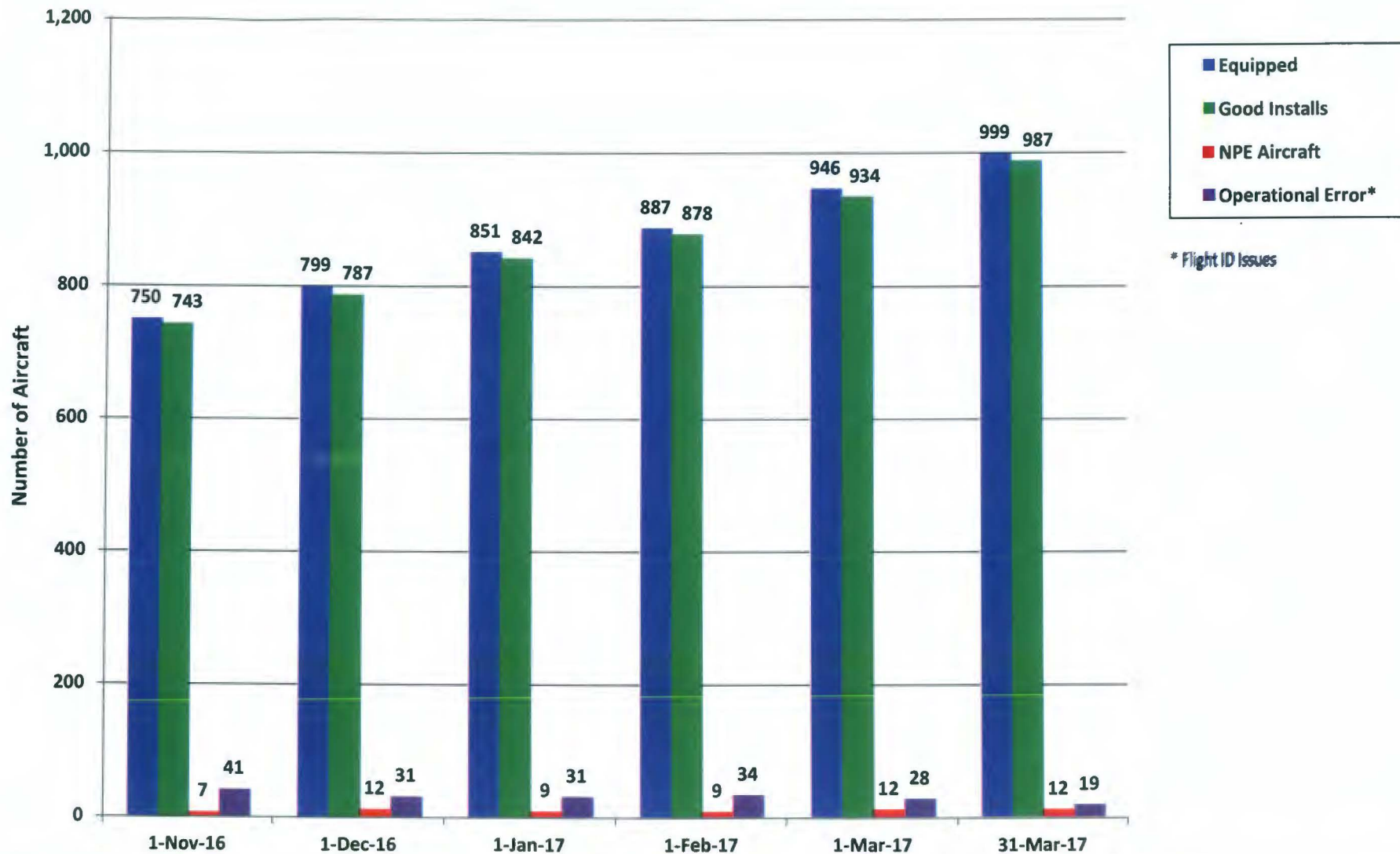
All US Aircraft Equipage & Avionics Performance



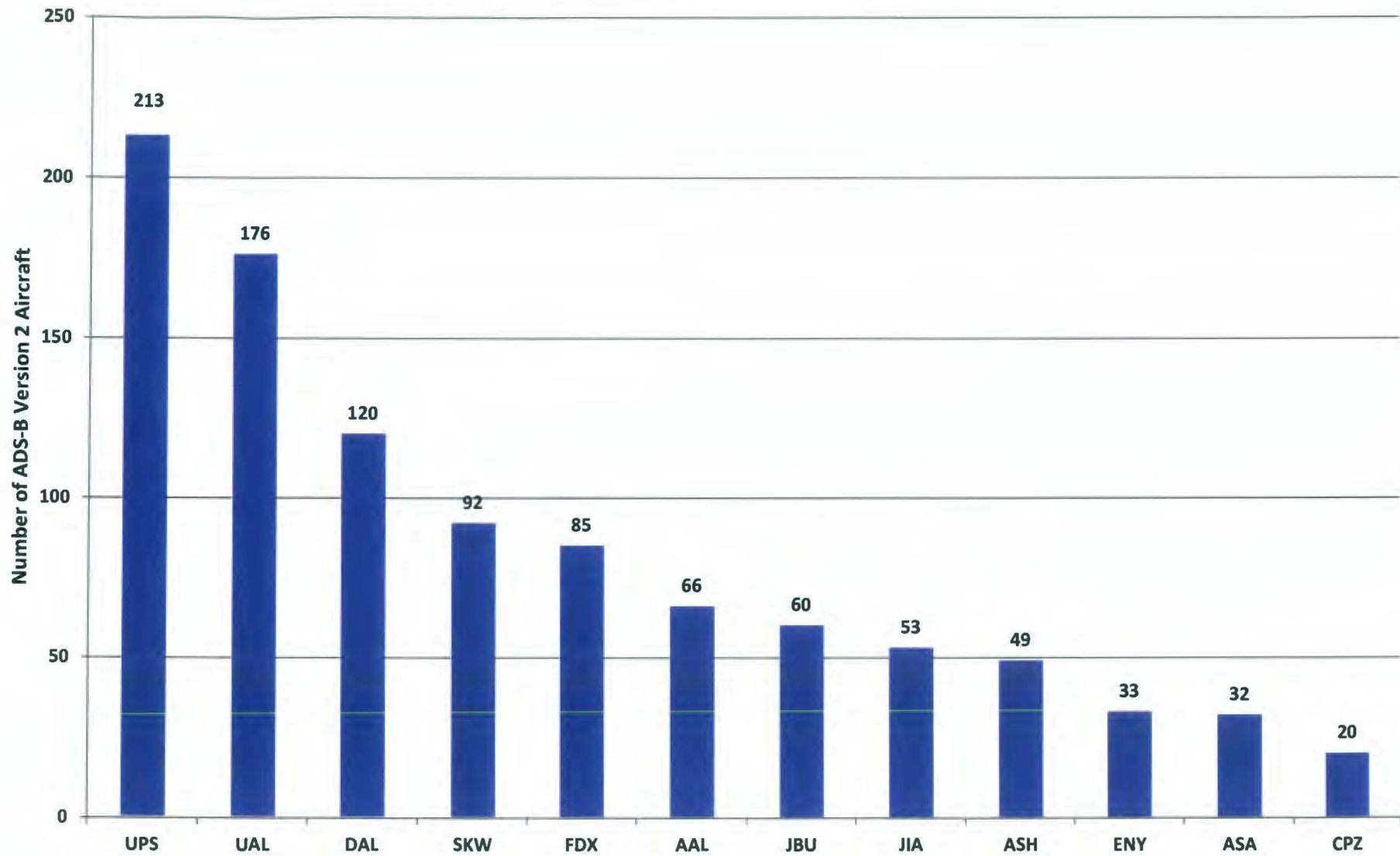
US GA Fixed-Wing Equipage and Avionics Performance



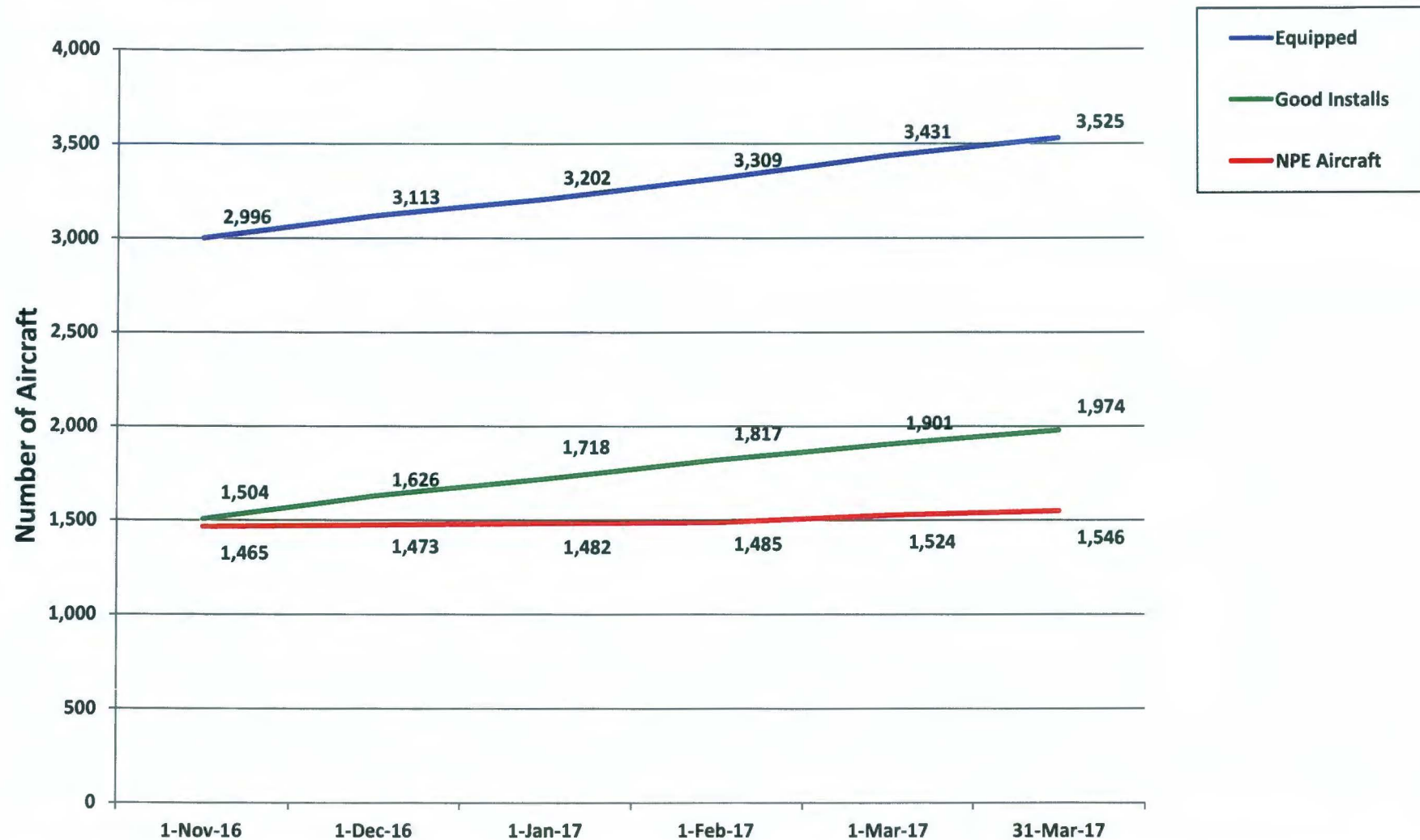
US Air Carrier Equipage & Avionics Performance



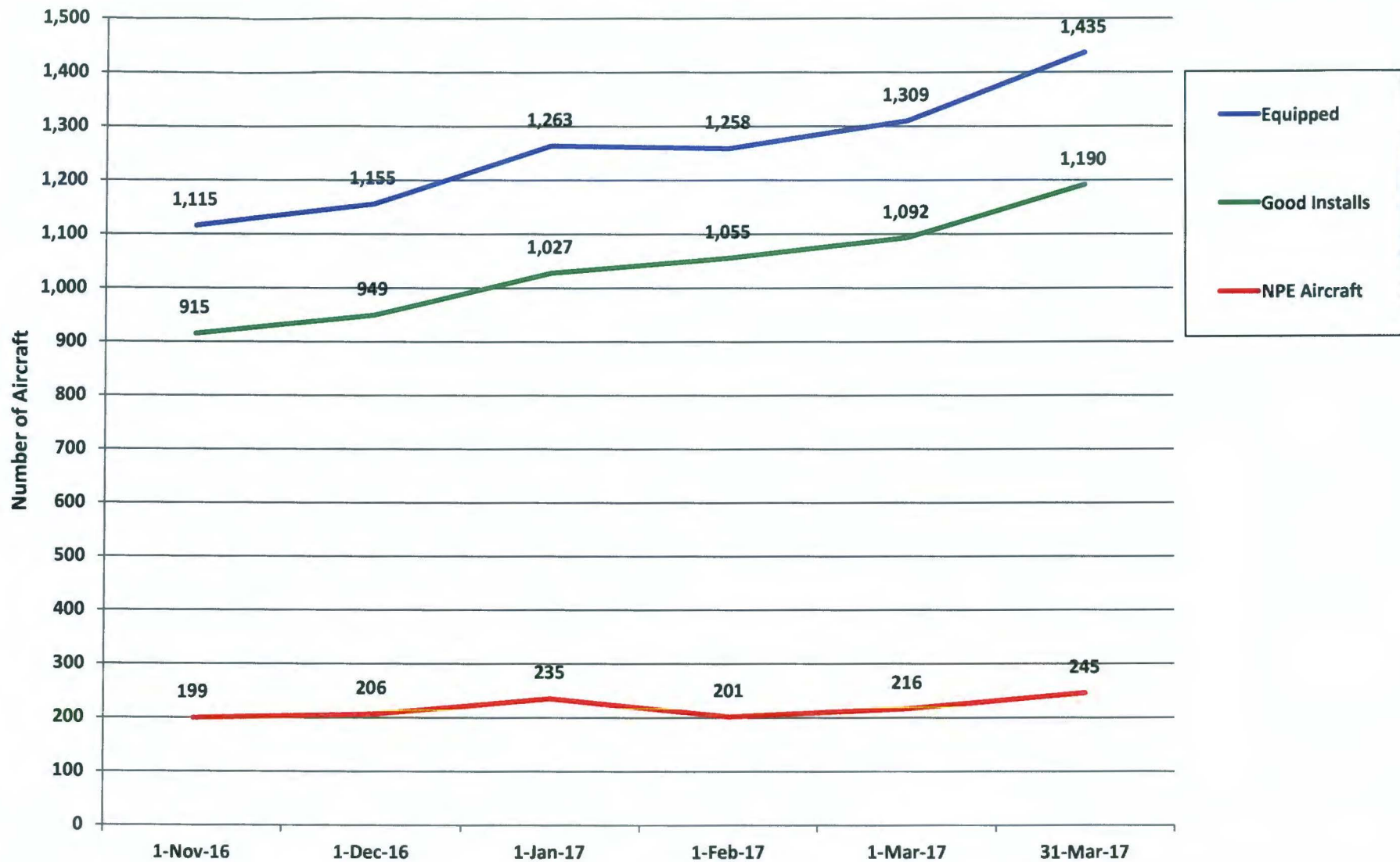
Equipage Status - U.S. Air Carrier April 1, 2017



USA Exp and LSA Aircraft Equipage and Avionics Performance



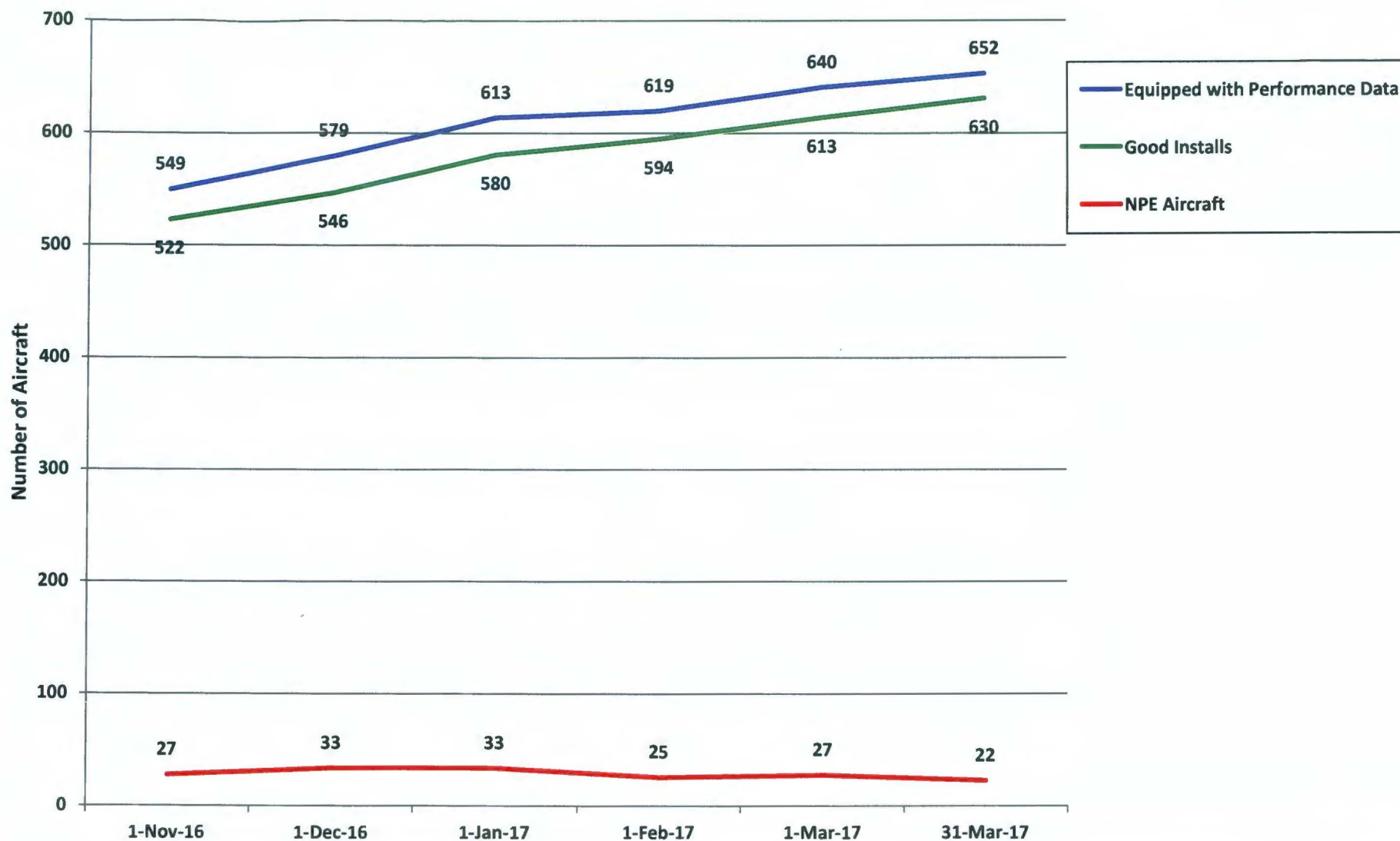
US Rotorcraft Equipage & Avionics Performance



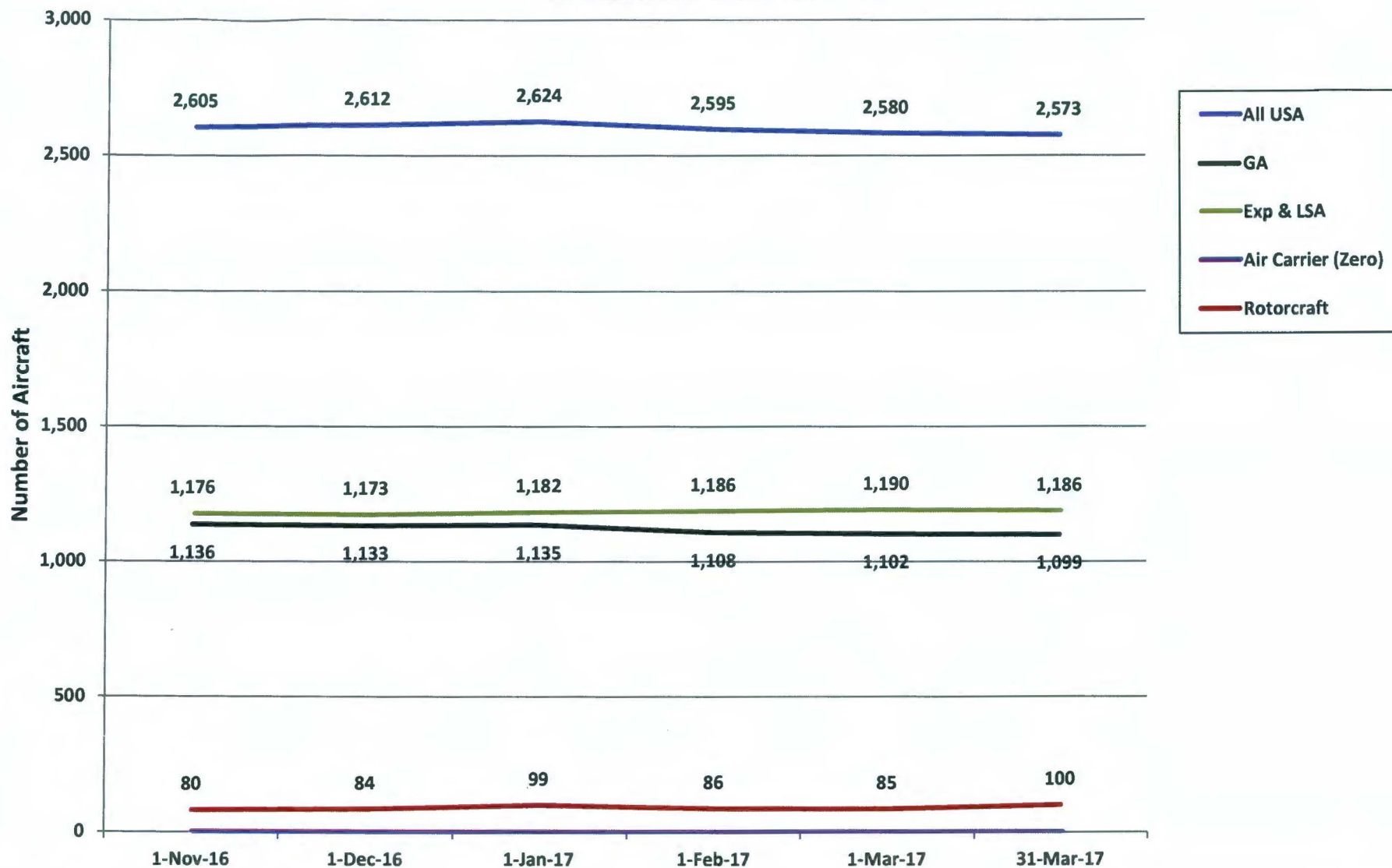
International GA Equipage & Avionics Performance



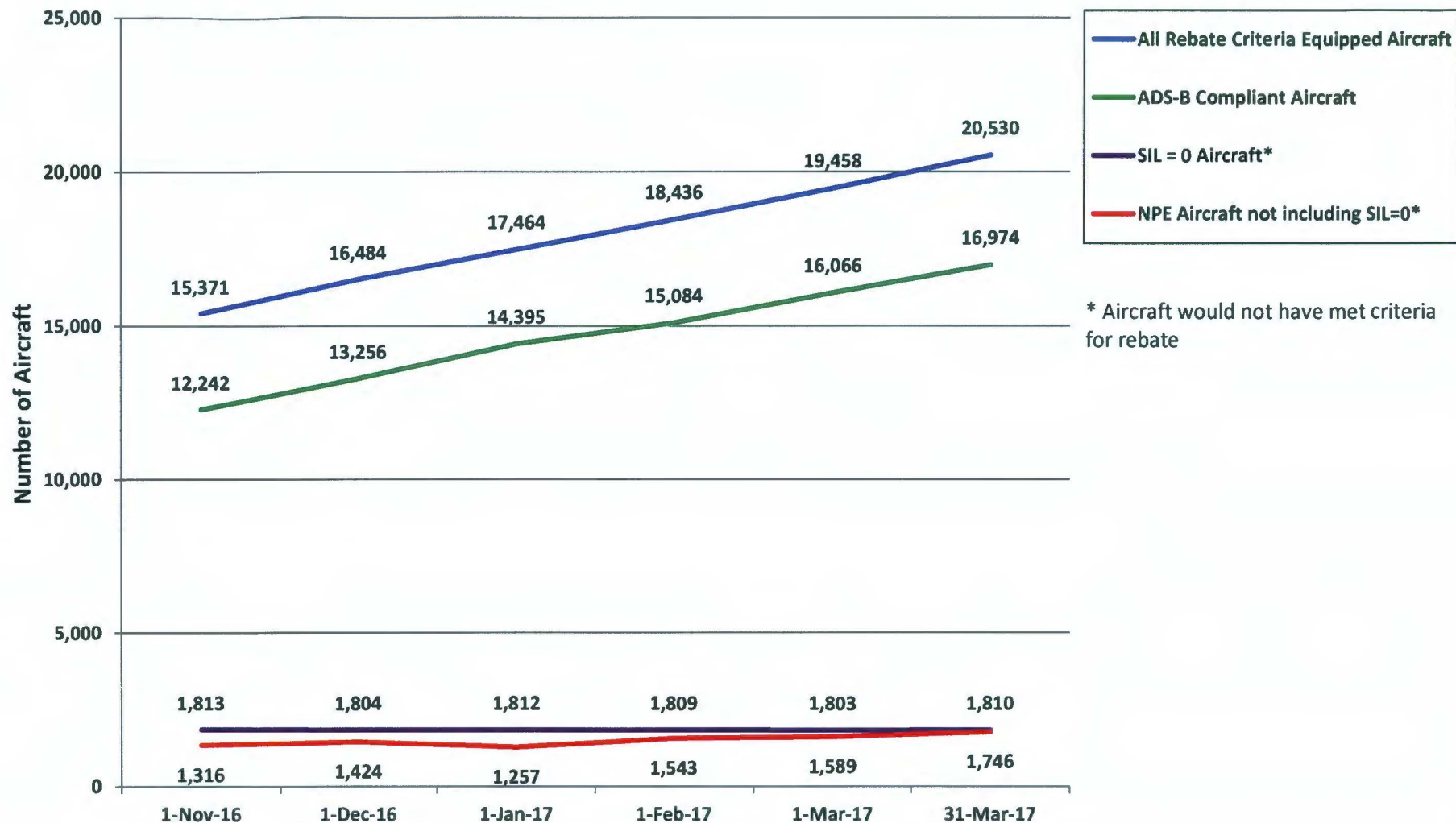
International Air Carrier Aircraft Equipage and Avionics Performance



US Aircraft with SIL = 0



US Fixed-Wing Single-Engine (rebate) Aircraft Equipage & Performance



Next**GEN**

DataComm

Reporting Progress



FAA

Data Comm – Update

- ✓ **Tower Services Waterfall – Q4 2016**
 - Completed challenge waterfall in December 2016
 - Proceeding forward with schedule planning of delivery of service to additional towers (RSW, CMH, CHS, BUF, RNO, ADW, and VNY)
- ✓ **Implementation Framework for non-VDL Mode 2 Media – Q1 2017**
 - Moving forward with agreed to framework
- **Initial Operating Capability (IOC) for Initial En Route Services at first Air Route Traffic Control Center (ARTCC) – Q3 2019**
 - Started development, integration and test of Data Comm Initial En Route Services
 - Conducting early operational evaluations and flight deck demos with stakeholders
 - Working risk mitigation strategies to address challenges in ERAM and legacy avionics
- **Airlines to equip 1,900 aircraft – Q4 2019**
 - 2,803 Data Comm equipped aircraft as of April 11, 2017 (includes FANS/VDL Mode 2, FANS/VDL Mode 0, business jets, and international aircraft – total count is 3,614 if DoD aircraft are included)
 - 1,259 aircraft have been equipped through the equipage initiative
- **Operational Summary**
 - Over 27,000 Data Comm ops per week
 - Participation from 10 mainline US carriers, 31 international carriers, 27 business jet operators, and general aviation
 - 41 different aircraft types using Data Comm
 - JetBlue expected to begin operations in April 2017

Data Comm – Risks

- **Integration and test of the component subsystems**
 - ERAM/TDLS/DCNS/FTI/Aircraft
 - Developing risk mitigation strategies to address challenges in ERAM
- **Air-to-Ground interoperability**
 - Issue resolution between air and ground systems
 - Latent avionics issues
 - ❖ Pegasus 1 contains defects affecting B757 and B767 aircraft
 - ❖ Additional route loading issues discovered during risk reduction testing for the B747-800, B787, and certain Airbus aircraft/avionics configurations
 - ❖ Working risk mitigation strategies to address challenges with latent avionics defects
- **New OpSpec A056 Requirements**
 - New Oceanic PBCS reporting requirements still need definition
- **Training**
 - Development and acceptance of training materials
 - Timing of training to support initial En Route operations (Air Traffic and Tech Ops training in ERAM)
 - Operator flight crew training to support waterfall
- **Operator support for the En Route waterfall**
 - Equipped aircraft needed to support Data Comm ARTCC site IOCs
 - Support for FAA air-to-ground interoperability site testing
- **Site coordination**
 - Coordination across multiple facilities and with operators to support transition to Data Comm En Route Initial CPDLC Services



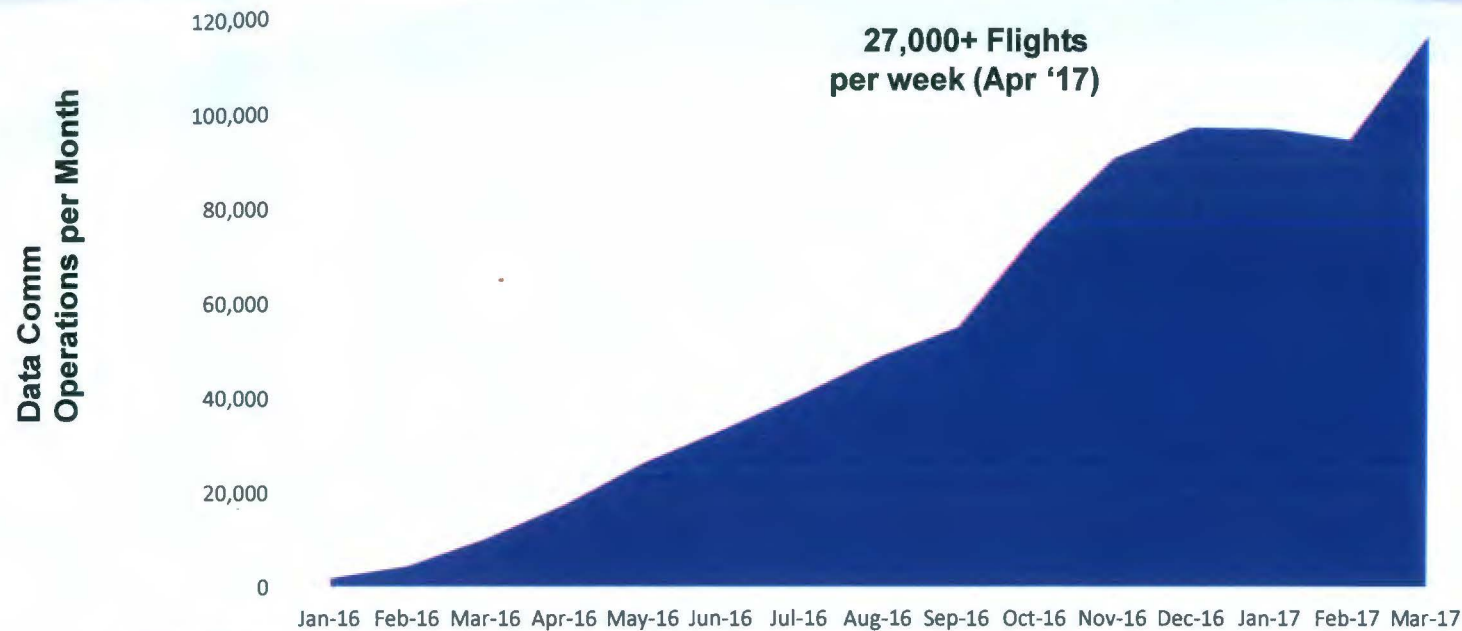
Data Comm - Equipage Status

DATA COMM AIRCRAFT



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Data Comm - Ops Summary



10 US Mainline Air Carriers



41 Aircraft Types



33 International Air Carriers



Business Jet Operators



ADS-B Out

NAC SC Update

By: Mark Steinbicker, Flight Standards

Date: May 18, 2017



ADS-B Out Equip 2020 Information for NAC SC

Art Branch

Sean McCourt

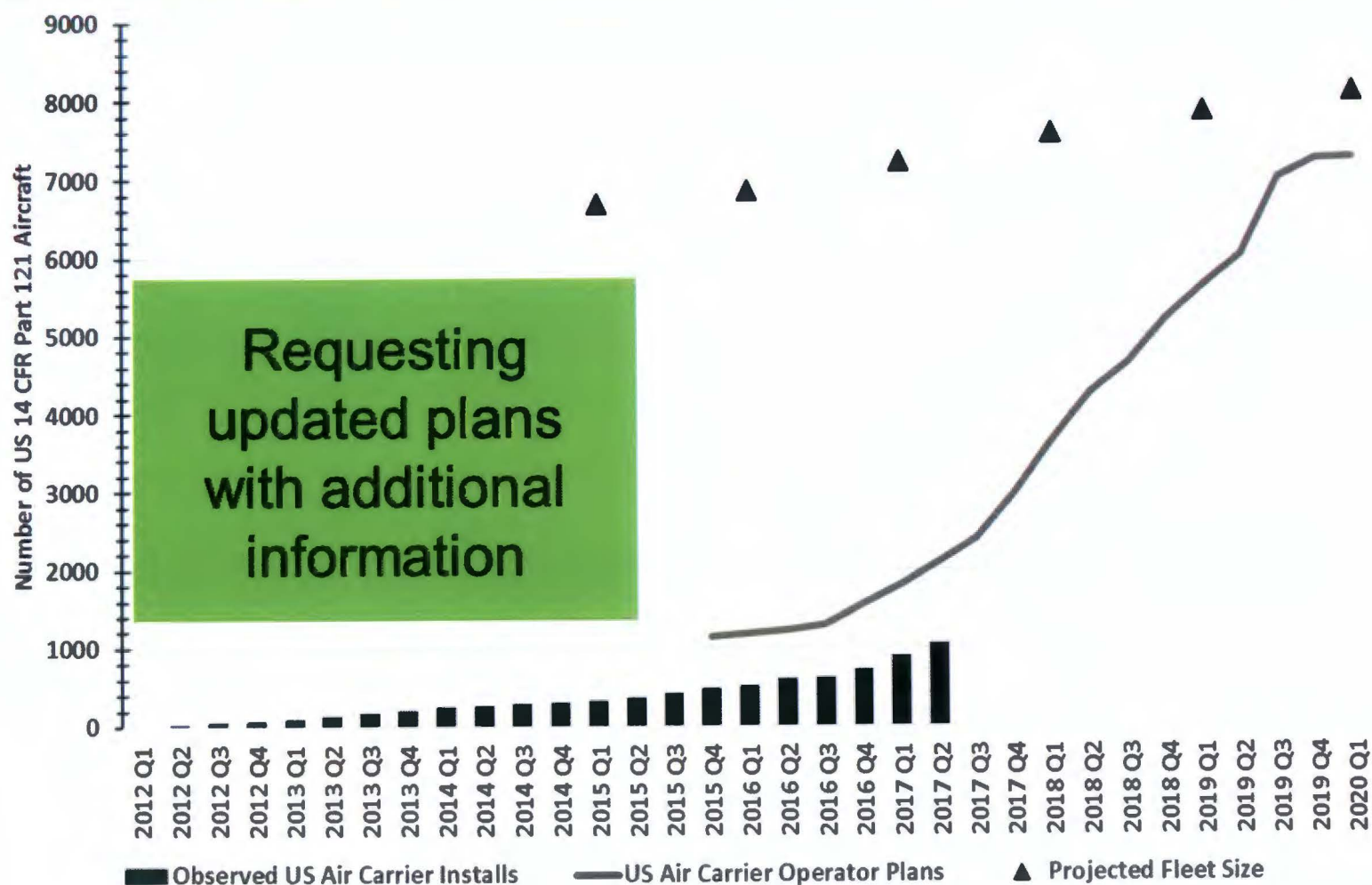
Quang Nguyen

Todd Stock

Doug Vandermade

May 16, 2017

US Air Carrier Operator Installation Plans and Observed Installs



Compliance data current as of 05/01/2017
 Operator plan data current as of 05/12/2017

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US 14 CFR Part 121 Operator ADS-B Out Equipage Plans Mapped to FAA Forecasted 2020 Fleet

Operator Plans Received in 2017 (7 Airlines) 47%

Delta
Envoy
FedEx
JetBlue
Southwest
United
UPS

Remaining Operators (49 Airlines) 5%

5 Largest Operators Without Submitted Plan 5%

Allegiant Air
Hawaiian
Mesa
Spirit
Virgin America

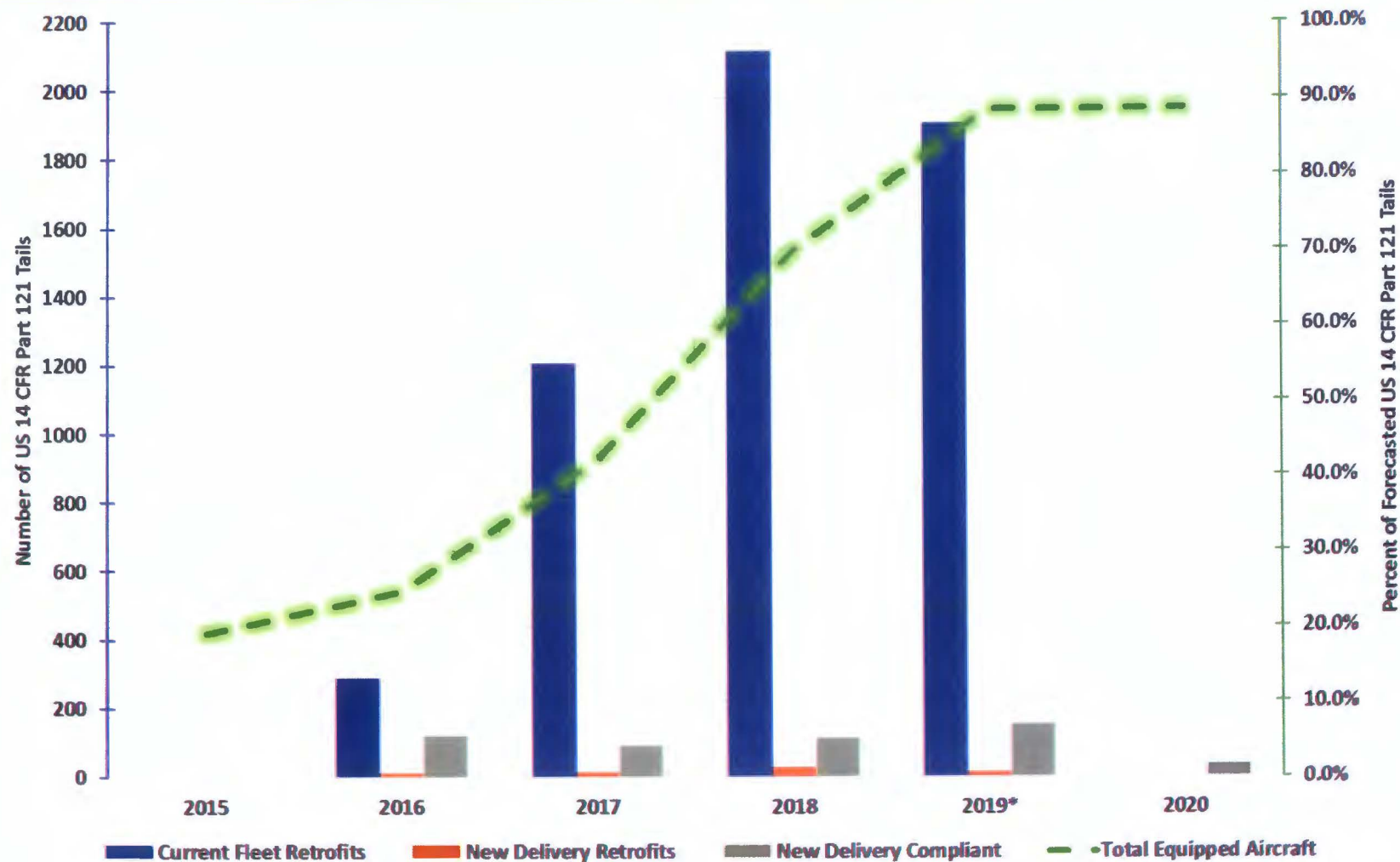
Forecasted New Delivery 2%

Operator Plans Received in 2016 (18 Airlines) 41%

Air Wisconsin
Alaska
American
CommutAir
Compass
Empire
Endeavor
ExpressJet
Frontier
GoJet
Great Lakes
Horizon
Piedmont
PSA
Republic
Shuttle America
SkyWest
Trans States

Operator plan data current as of 05/12/2017

US 14 CFR Part 121 Operator ADS-B Out Equipage Plans Mapped to FAA Forecasted Fleets



Operator plan data current as of 05/12/2017

Aircraft Expected to Equip for ADS-B Out Rule

Data Sources and Methodology

■ Sources

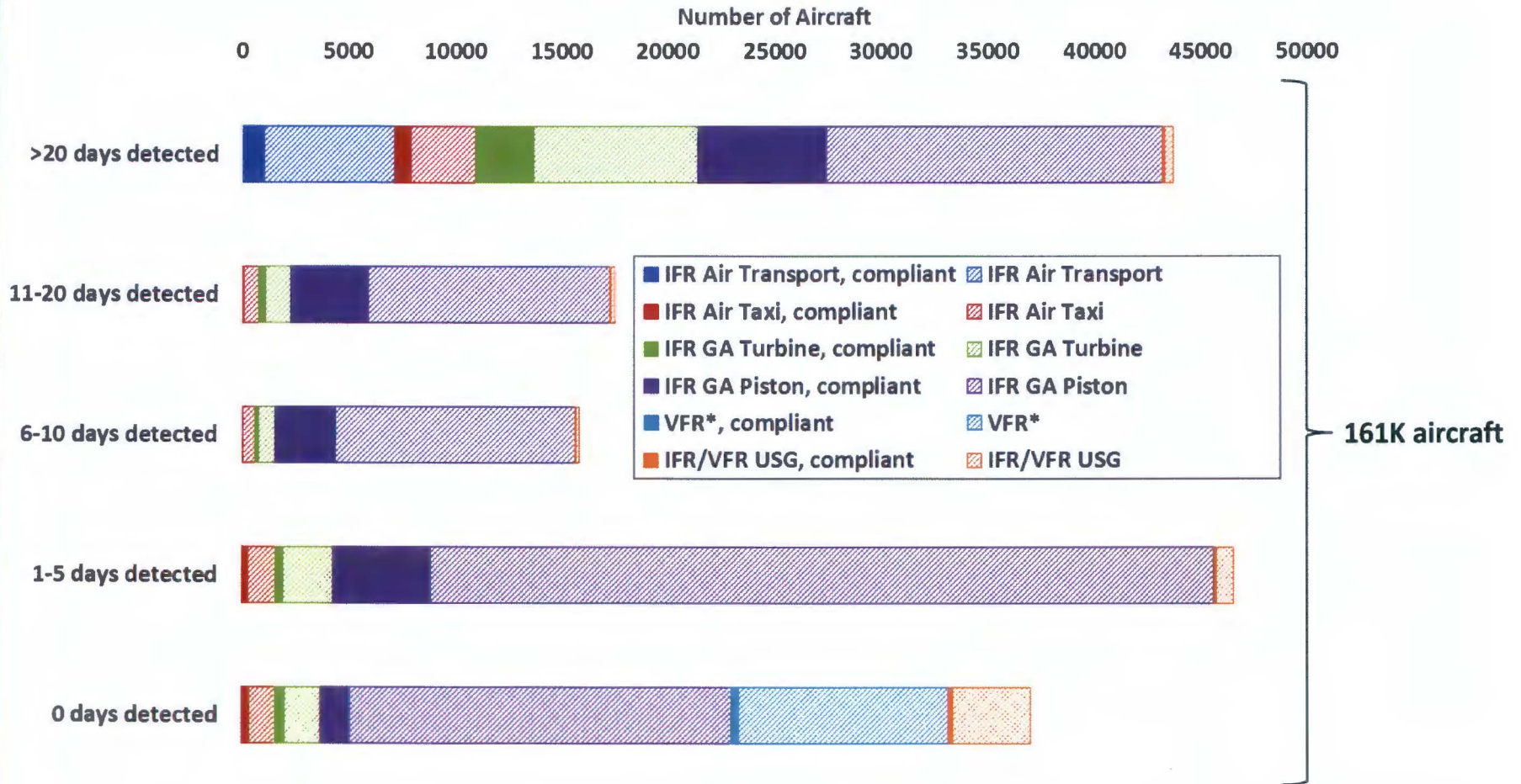
- FAA Aircraft Registry (May 2017)
- FAA Web-based Operation Safety System (WebOPSS) (May 2017)
- FAA provided Class B or C airport basing data
- FAA IFR flight plan data (April 2016 – April 2017)
- 2016 MITRE Threaded Track ADS-B Airspace analysis (calendar year 2016)
- FAA Avionics Trend Analysis Tool (ATAT Report) (February 2017 - May 2017)

■ Methodology

- Aircraft that are currently included in the total:
 - **Air Transport (14 CFR Part 121)** = all aircraft
 - **Air Taxi (14 CFR Part 135/91K)** = flew IFR, flew through rule airspace, or filed to or based at Class B or C airport
 - **General Aviation (14 CFR Part 91, turbine or piston)** = flew IFR, flew through rule airspace, or filed to or based at Class B or C airport
 - **VFR (14 CFR Parts 91 and 135)** = aircraft based at Class B or C airport or flew through rule airspace
 - **Government** = all government owned aircraft, excluding military
- Compliance is measured through ATAT reporting using same method as AFS-360

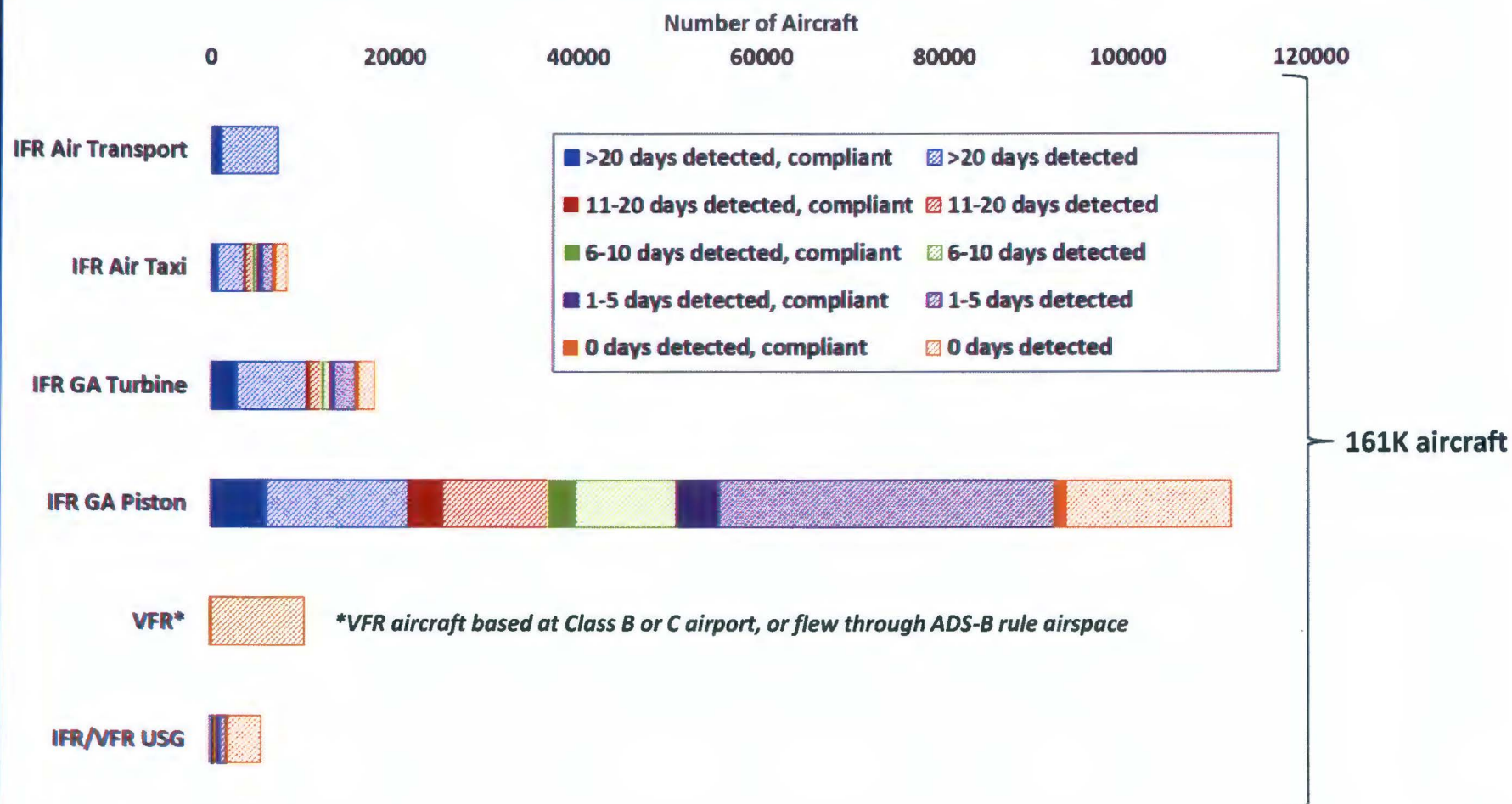
Aircraft Expected to Equip for ADS-B Out Rule

Grouped by Days Detected in Rule Airspace in CY2016



*VFR aircraft based at Class B or C airport, or flew through ADS-B rule airspace

Aircraft Expected to Equip for ADS-B Out Rule *Grouped by Operation Type*





**Federal Aviation
Administration**

Equip 2020

ADS-B Equipage & Avionics Performance Update

May 1, 2017



May 2017 Equipage (good install) Monitoring

Rule Driven ADS-B Out Aircraft Detected by FAA network

Category	As of 31-March-2017 (ATAT)	As of 1-May-2017 (ATAT)	Monthly Increase		% of estimated fleet equipped^, as of 1-May-2017
All Link Version 2	27,431	29,000	1,569	5.72%	
1090ES	21,385	22,904	1,519	7.10%	
UAT	5,191	5,236	45	0.87%	
Dual	855	860	5	0.58%	
US General Aviation (includes EXP & LSA)	22,840	24,173	1,333	5.84%	15.1% - 24.2%
US Air Carrier	987	1,046	59	5.98%	17.4.% - 20.9%
Intl General Aviation*	1,743	1,831	88	5.05%	
Intl Air Carrier	630	656	26	4.13%	
U.S. Military & U.S. Special Use	29	29	0	0.00%	

<http://www.faa.gov/nextgen/equipadsb/equipment/monitoring/>

*Aircraft incorrectly reporting outside US ICAO block are included in Intl GA count.

^percentage range based on estimates of 5,000-6,000 US air carrier aircraft and 100K-160K US general aviation aircraft

ATAT – The ATAT was used to generate these numbers starting on June 1, 2016



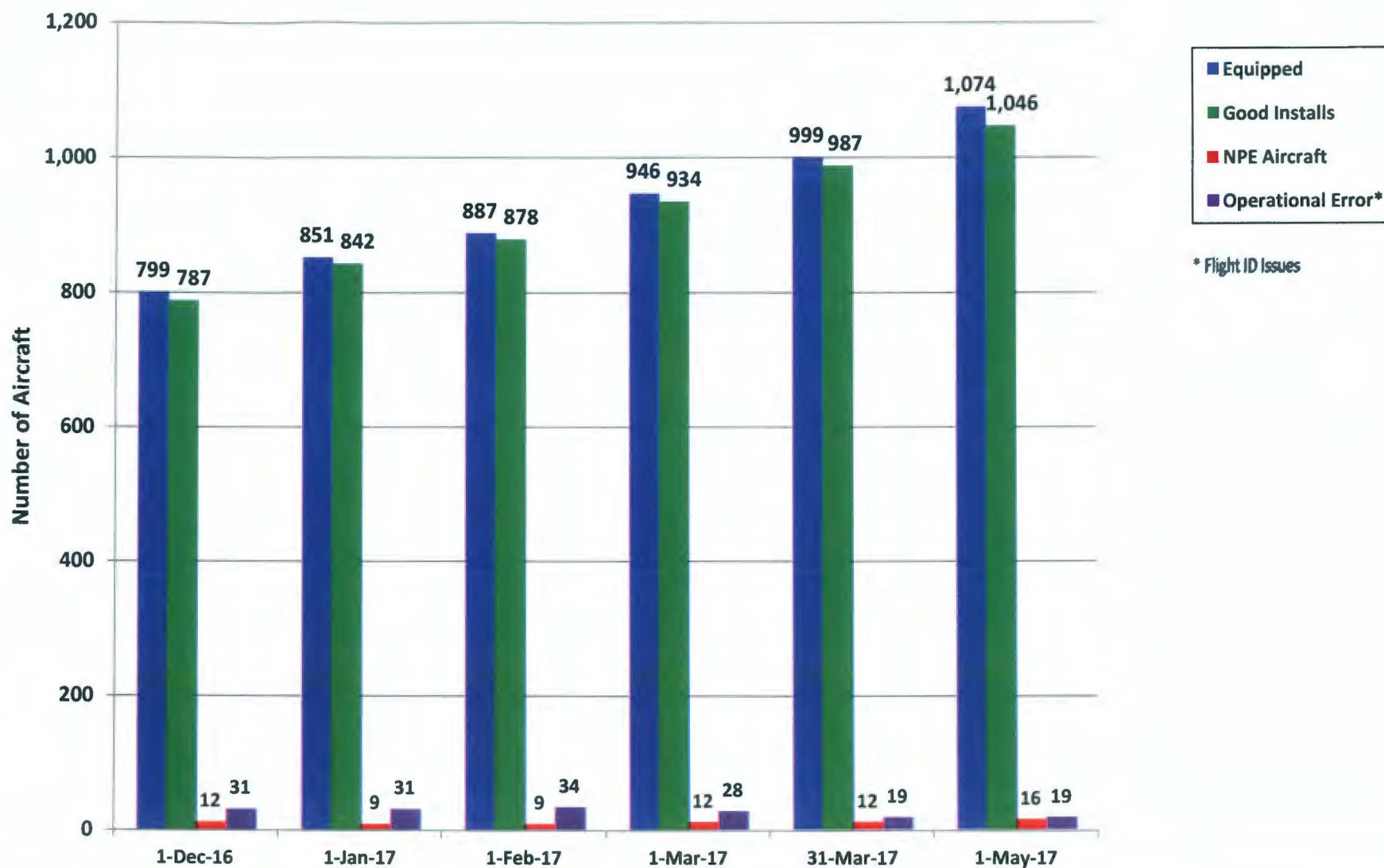
All US Equipage & Avionics Performance



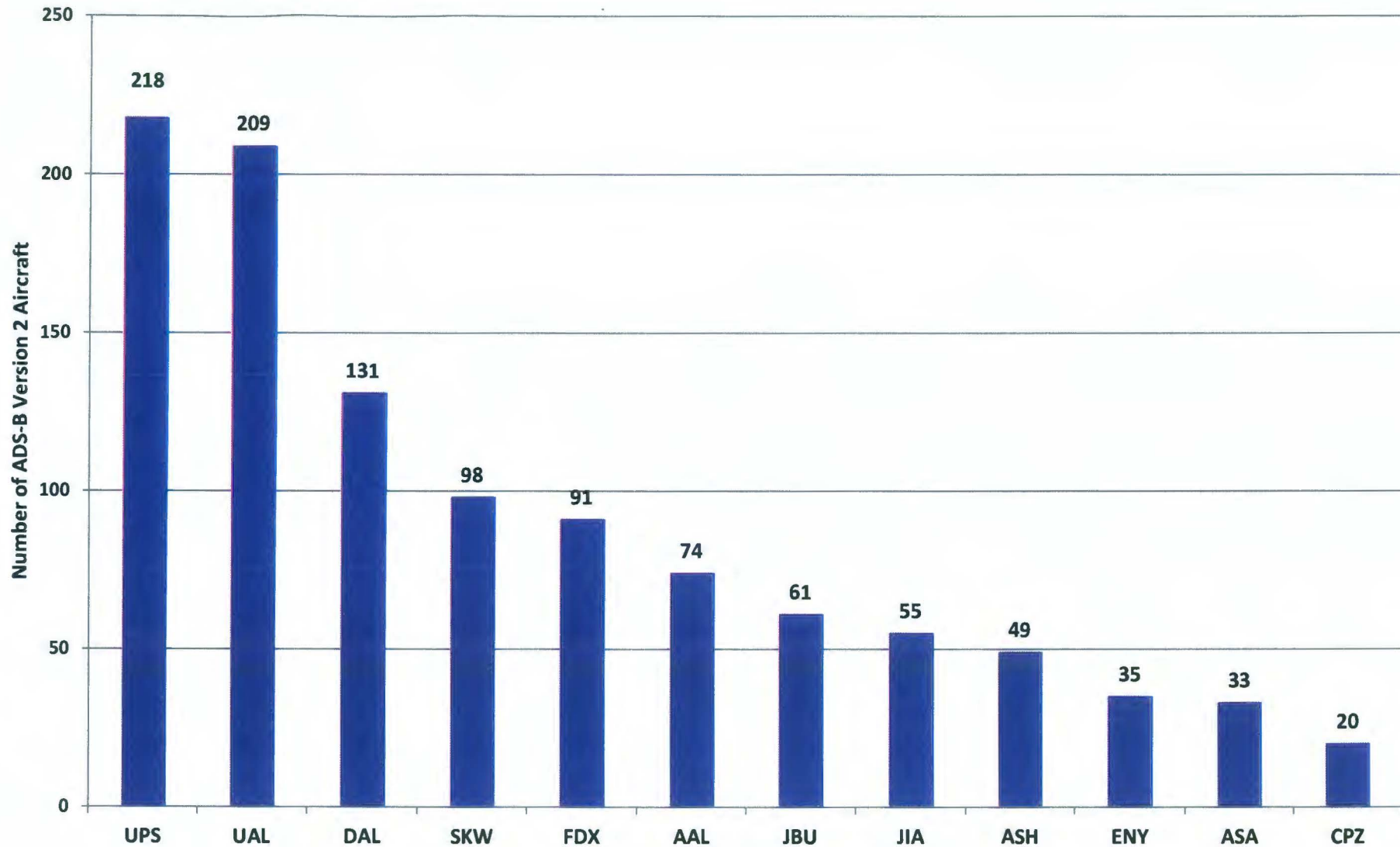
ADS-B Out Version 2 Equipage (good installs) U.S. Air Carriers Actuals vs 5K and 6K by 2020 Goals



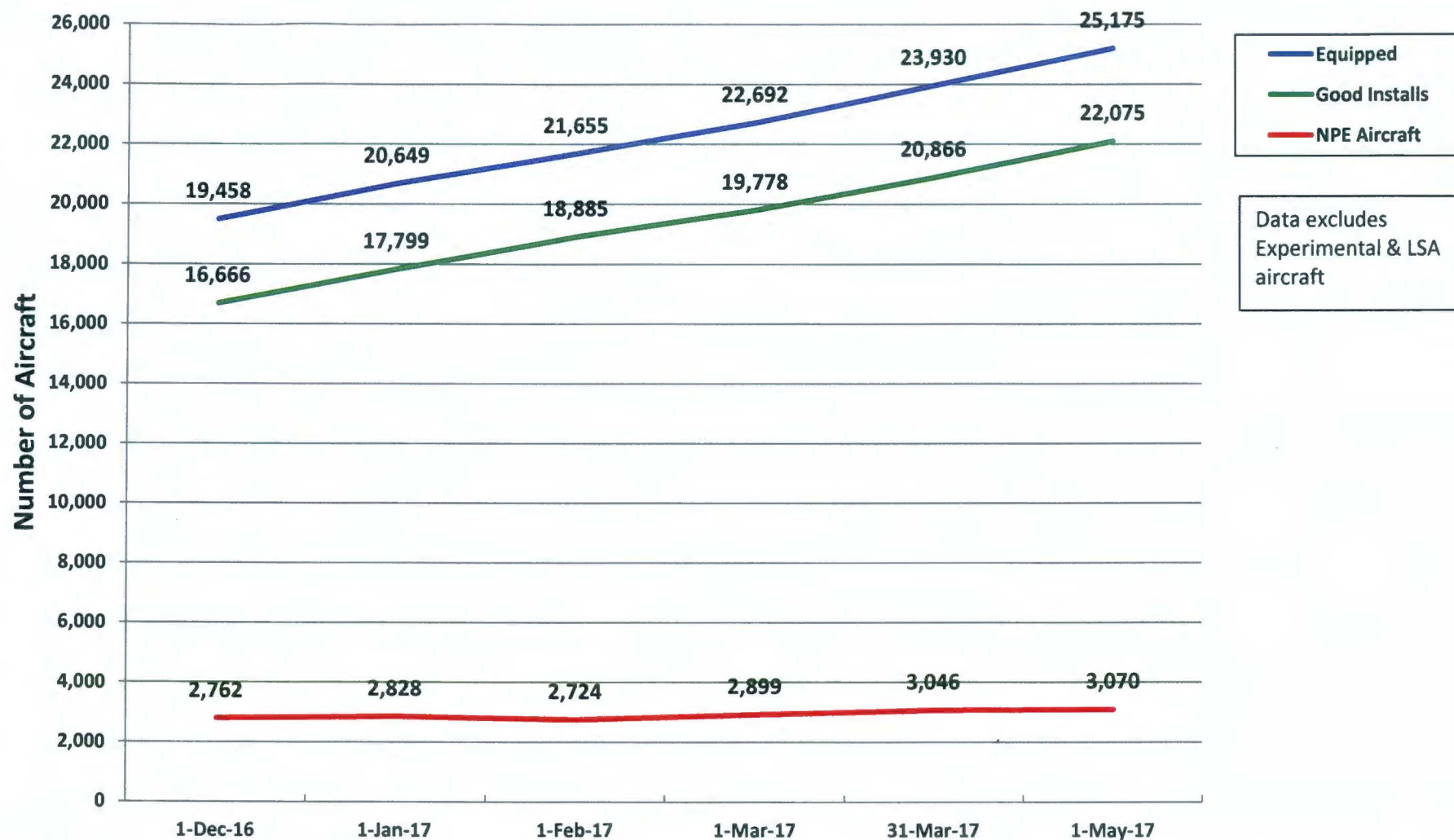
US Air Carrier Equipage & Avionics Performance



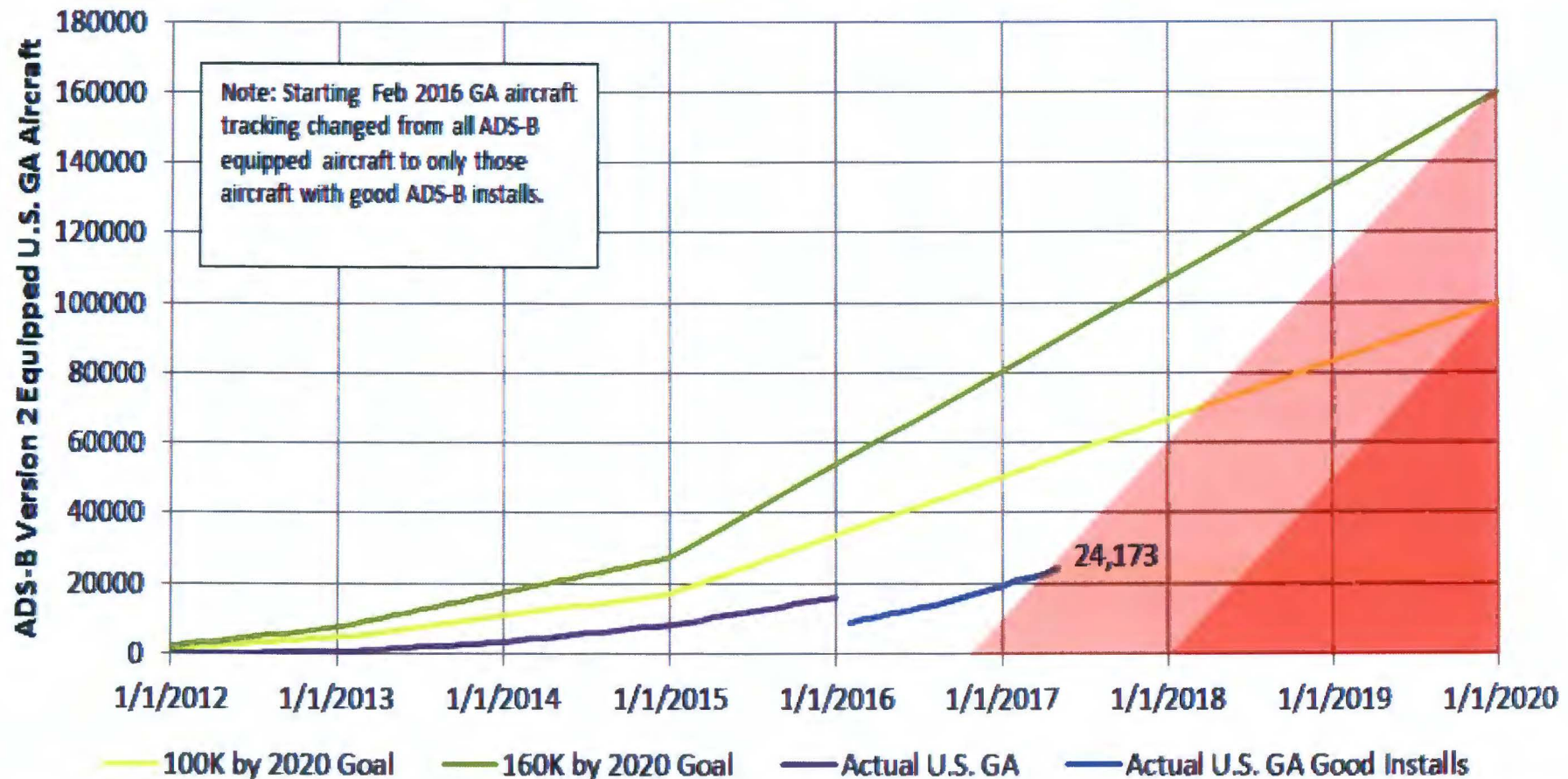
Equipage Status - U.S. Air Carrier May 1, 2017



US GA Fixed-Wing Equipage and Avionics Performance



ADS-B Out Version 2 Equipage U.S. General Aviation (good installs) (including Exp & LSA aircraft) Actuals vs 100K and 160K by 2020 Goals



Ongoing Outreach Campaign

— ADS-B —
EQUIP NOW!

DON'T GET LEFT IN THE HANGAR

By January 1, 2020, you must be equipped with **ADS-B Out** to fly in most controlled airspace.

Experience a new level of situational awareness:

- Weather
- Traffic
- TFRs
- NOTAMs

See and be seen. #ADSB

— ADS-B —
EQUIP NOW!

FOR MORE INFO VISIT
faa.gov/go/equipadob



— ADS-B —
EQUIP NOW!

SEE and be SEEN

Experience a new level of situational awareness:

- Weather
- Traffic
- TFRs
- NOTAMs

Now is the time to equip. #ADSB

By January 1, 2020, you must be equipped with **ADS-B Out** to fly in most controlled airspace.

— ADS-B —
EQUIP NOW!

FOR MORE INFO VISIT
faa.gov/go/equipadob





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Rebate

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FAQs

Resources

NextGEN Equip ADS-B

"I'm going to say this as plainly as I can: the ADS-B equipage deadline is not changing. If you plan to fly your plane in most controlled airspace after December 31, 2019, you're going to need to install ADS-B."

Victoria Wassmer

FAA Acting Deputy Administrator at
Sun 'n Fun

"I'm going to say this as plainly as I can:



the ADS-B equipage deadline is not changing."



Next**GEN**

Data Comm

Status Report



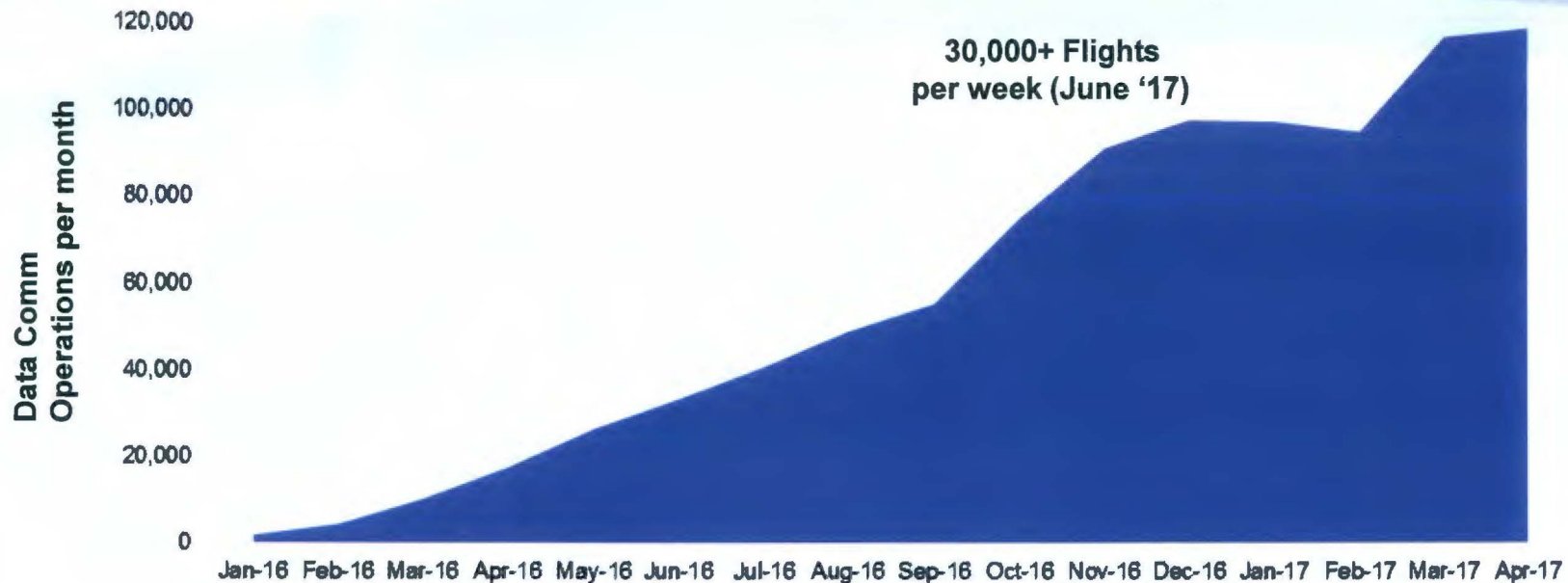
FAA

Data Comm – Update

- ✓ **Tower Services Waterfall – Q4 2016**
 - Completed challenge waterfall in December 2016 – 2½ years ahead of plan
 - Additional towers (RSW, CMH, CHS, BUF, RNO, ADW, and VNY) scheduled to all be operational with data Comm services by June 2018
- ✓ **Implementation Framework for non-VDL Mode 2 Media – Q1 2017**
 - Moving forward with agreed to framework
- **Initial Operating Capability (IOC) for Initial En Route Services at first Air Route Traffic Control Center (ARTCC) – Q3 2019**
 - Started development, integration and test of Data Comm Initial En Route Services
 - Conducting early operational evaluations and flight deck demos with stakeholders
 - Working risk mitigation strategies to address challenges in ERAM and legacy avionics
- **Airlines to equip 1,900 aircraft – Q4 2019**
 - 3,053 Data Comm equipped aircraft as of June 10, 2017 (includes FANS/VDL Mode 2, FANS/VDL Mode 0, business jets, and international aircraft – total count is 3,827 if DoD aircraft are included)
 - 1,359 aircraft have been equipped through the equipage initiative
- **Operational Summary**
 - Over 30,000 Data Comm ops per week (over 6000% growth in operations from January 2016 to May 2017)
 - Participation from 12 mainline US carriers, 35 international carriers, 39 business jet operators, and general aviation
 - 41 different aircraft types using Data Comm



Tower Service Ops Summary



12 US Mainline Air Carriers



41 Aircraft Types



35 International Air Carriers

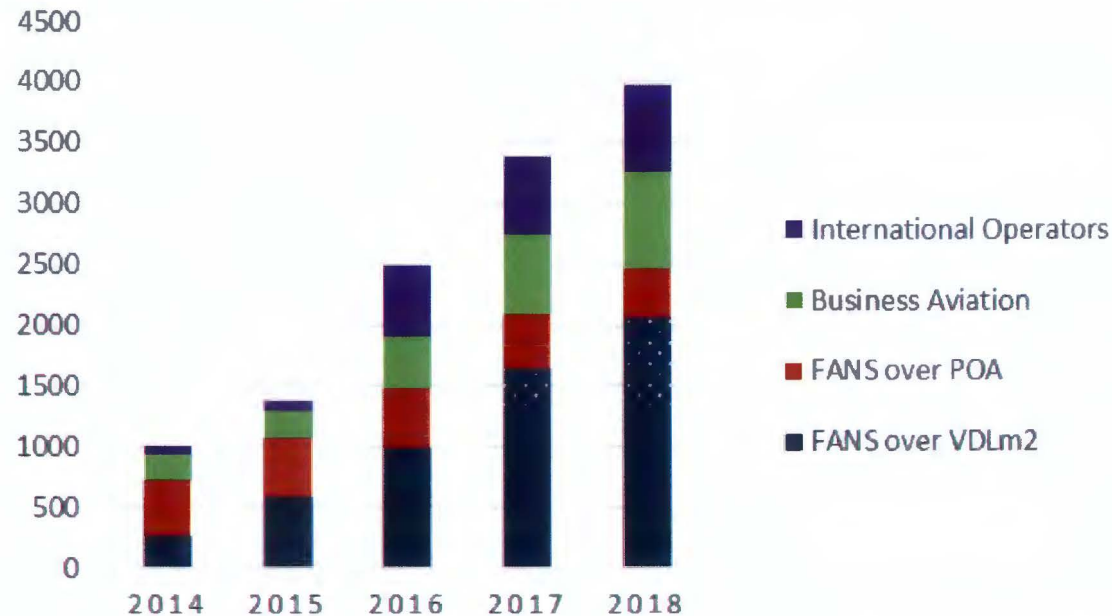


Business Jet Operators



Data Comm - Equipage Status

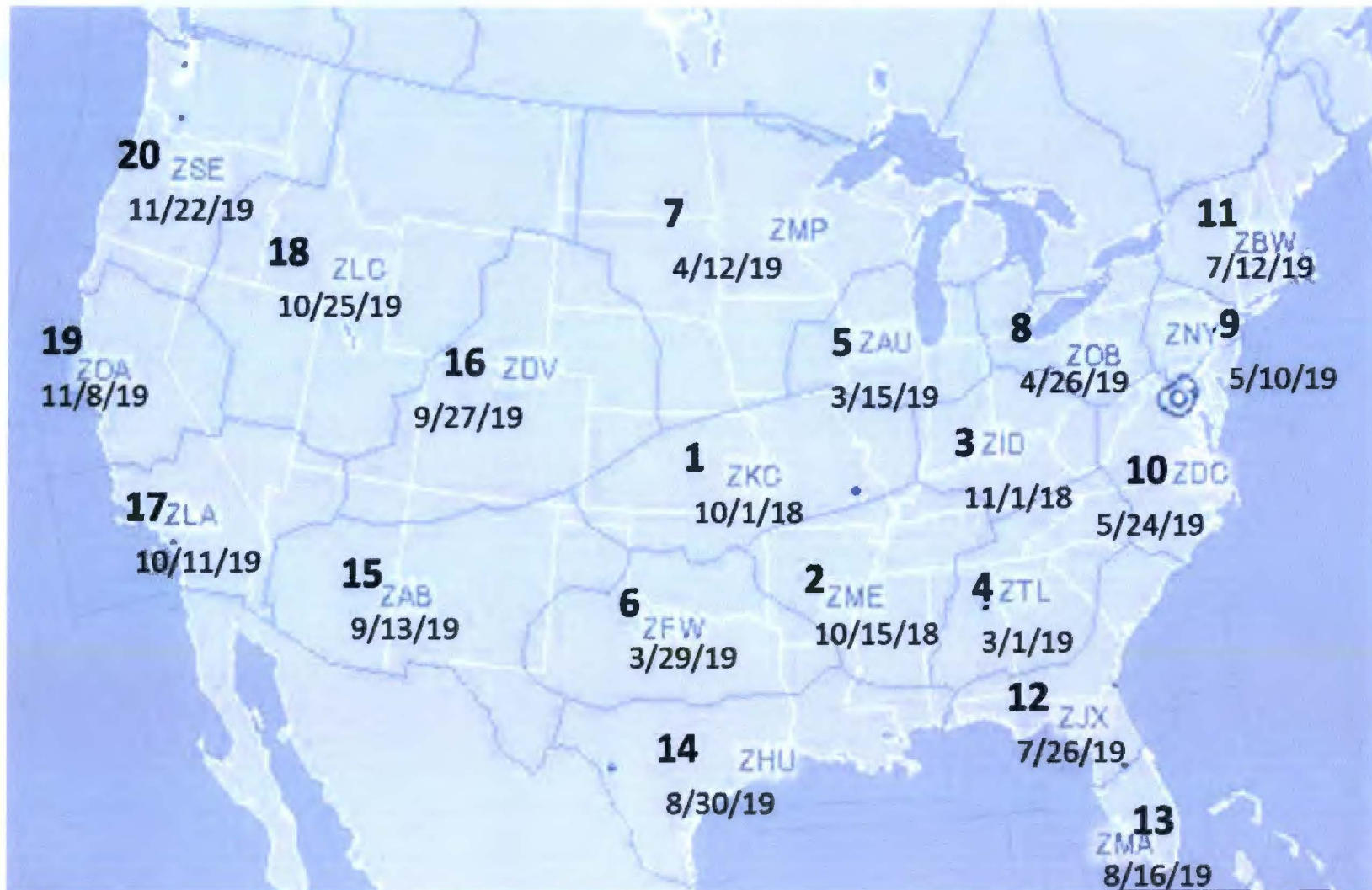
DATA COMM AIRCRAFT



- **3,053 Data Comm equipped aircraft operating in the NAS as of June 10, 2017**
 - Includes FANS/VDL-2, FANS/POA, business jets, and international aircraft
- **1,359 aircraft have been equipped through the Data Comm equipage initiative**

Data Comm En Route

Initial Services Challenge Waterfall



Data Comm – Risks

- **Integration and test of the component subsystems**
 - ERAM/TDLS/DCNS/FTI/Aircraft
 - Developing risk mitigation strategies to address packaging challenges in ERAM releases
- **Air-to-Ground interoperability**
 - Interoperability testing has discovered latent avionics issues critical to En Route implementation
 - Developed ground based workaround and mitigations strategy to allow all aircraft to participate in en route services
 - Avionics fix is still required to address the interoperability issue
- **Training**
 - Development and acceptance of training materials
 - Timing of training to support initial En Route operations (Air Traffic and Tech Ops training in ERAM)
 - Operator flight crew training to support the waterfall
- **Operator support for the En Route waterfall**
 - Equipped aircraft needed to support Data Comm ARTCC site IOCs
 - Support for FAA air-to-ground interoperability site testing
- **Site coordination**
 - Coordination across multiple facilities and with operators to support transition to Data Comm En Route Initial CPDLC Services



FY-2017 ADS-B OUTREACH ACTIVITIES

Activities					
FY 2017 ADS-B Outreach Activities to General Aviation					
Date	Collaborations	Media	Education Services & Products	Events	Description
<i>Recurring Activity</i>			95 FFAST seminars		FAA Team safety seminars: Each of the 95 FFAST Team Program Managers is tasked by AFS-850 to conduct at least one ADS-B seminar per year using the presentation prepared by ANG-F.
<i>Recurring Activity</i>			Education Services		Services provided at FAA booths at outreach events: Where the FAA has an exhibit booth, subject matter experts are available to answer questions and to provide on the spot services including: ADS-B Out equipment performance checks, rebate reservations, regulatory information, airspace tutorial, cockpit traffic display demonstration and FAQs.
<i>Recurring Activity</i>			Rebate incentive		FAA incentive rebate: \$500 rebate launched September 19, 2016 and concluded September 18, 2017; Program is limited to 12 months and 20,000 rebates; Staff provided on-site rebate reservations at outreach events with FAA exhibit booths and staff; As of June 16, 6329 reservations had been made and 4942 claimed.
<i>Recurring Activity</i>			EquipADSB web site		EquipADSB: The agency's one-stop online source of information related to ADS-B rule, equipment, installation, benefits; web site is updated on an ongoing basis to add new information.
October					

FY-2017 ADS-B OUTREACH ACTIVITIES

10/1				Speaker at AOPA Prescott	Seminar: Fly-In hosted by AOPA for GA aircraft owners; 6,000 attendees in total with FAA achieving 600 touch points (attendees of the seminar, booth, or that obtained handout material distributed at the ADS-B booth, FAASTeam booth, or from literature made available in the seminar tents; attendees were GA aircraft owners and pilots primarily from AZ and surrounding states.
10/1	HQ wkly. policy mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
10/5	NAC Mtg.				NextGen Advisory Committee (NAC): RTCA hosted meetings with FAA and industry to discuss NAS modernization including ADS-B infrastructure and fleet equipage; FAA provides briefings on equipage numbers, and industry discussing equipage plans.
10/14		FAA web consolidation			Web update: Major update complete including new rebate page; consolidation of equipment related FAQs from the ATO's ADS-B infrastructure web site.
10/19				Booth at ATCA	ATCA Annual Conference: FAA hosted a booth to promote the passenger experience.
November					

FY-2017 ADS-B OUTREACH ACTIVITIES

11/1				Booth at NBAA	NBAA: FAA hosted a booth at the NBAA annual convention and exhibition to provide ADS-B information to business aviation flight dept. managers and chief pilots; Where the FAA has an exhibit booth, subject matter experts are available to answers question and to provide on the spot services including: ADS-B Out equipment performance checks, rebate reservations, regulatory information, airspace tutorial, cockpit traffic display demonstration and FAQs.
11/1		Article in AEA Avionics News			Article: FAA authored article titled "Don't Be Late To Meet This Very Important Date"
11/1	HQ wkly. policy mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
1/25	VA Dept. of Aviation				VA DOT: ATO PMO Lucy Kruse briefed Steve Harris about the Regional Outreach effort and strategy.
December					
12/6	Equip 2020 qtly. mtg.				Equip 2020 Group: Quarterly FAA-Industry meeting to discuss roadblocks to equipage; ANG-F briefs on FAA outreach activities.
12/31		Social media for ADS-B			Social media: ADS-B social media posts tied to New Years Eve.
January					
1/1	HQ wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.

FY-2017 ADS-B OUTREACH ACTIVITIES

1/1	HQ wkly. policy mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
1/4		Article in General Av. News			Article: Getting Up to Speed on ADS-B
1/18		FAAST email			FAAST Blast with mention of ADS-B Air/Ground failure message on performance reports in the Jan. 9-15 email.
1/25	HQ to NASAO Briefing				Briefing: NextGen/ADSB Update briefing to NASAO directors meeting
February					
2/1	HQ wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
2/1	HQ wkly. policy mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
2/1	HQ (AJV-5) charting office				AJV-5: Lucy Kruse briefed Lauren Priem at AJV-5 on the outreach activities and FAA authorized chart agents; reached out to Aeronautical Charting Forum (meeting was eventually cancelled).
2/22	NAC Mtg.				NextGen Advisory Committee (NAC): RTCA hosted meetings with FAA and industry to discuss NAS modernization including ADS-B infrastructure and fleet equipage; FAA provides briefings on equipage numbers, and industry discussing equipage plans.
2/22				Booth at AACA	Booth at Alaska Air Carriers Association: ATO SBS had a booth to promote ADS-B at the AACA Trade Show.

FY-2017 ADS-B OUTREACH ACTIVITIES

2/23			AOC video		Video: AOC created and placed on FAA's YouTube channel a video to promote the benefits of ADS-B in aircraft; the video asks "What Are You Waiting For?"; video also displayed at outreach events.
March					
3/1	HQ wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
3/1	HQ wkly. policy mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
3/1		FAA Safety Briefing mag.			FAA Safety Briefing: Several articles published in this FAA magazine on the topics of the ADS-B mandate and rebate program.
3/2		FAAST email			FAAST Blast GovDelivery message on ADS-B issue (approx. 38,068 recipients, 32% open rate, 7% click through rate - very successful).
3/2			New brochure		Rebate handout: 1,500 brochures distributed at the SNF booth and a meeting with FDOT and FL airport steering committee.
3/2			Talking points for ADA		Talking Points: ANG created ADS-B talking points for use by the Deputy Administrator at Sun n Fun.
3/6		FAAST email			FAAST Blast: SPANS message sent to draw attention to the ADS-B issue of FAA Safety Briefing magazine.
3/8				Panel at HAI	Panel: at HAI conference with Andrew Shutt (SBS) and Paul VonHoene (AFS-430) to promote ADS-B.

FY-2017 ADS-B OUTREACH ACTIVITIES

3/13		FAAST email			FAAST Blast: Mention of new FAA Safety Briefing ADS-B issue and SAFO on ADS-B equipment testing procedures in Mar. 6-12 Blast.
3/13				Booth at AEA	Booth at Aircraft Electronics Association: SBS exhibit booth at the AEA Convention. Presentation on equipment installation policy and guidance.
3/19	Equip 2020 qtly. mtg.				Equip 2020 Group: Quarterly FAA-Industry meeting to discuss roadblocks to equipage; ANG-F briefs on FAA outreach activities.
3/22				Booth at NATCA CFS	Booth at National Air Traffic Controllers Association: SBS exhibit booth at the NATCA conference.
3/27		FAAST email			FAAST Blast: Mention of ADS-B 1010 article in Mar. 20-26 Blast.
April					
4/1			VR traffic demo		Demo: FAA completed development of an interactive virtual reality demonstration that puts the viewer inside of the aircraft cockpit and provides a realistic video of nearby aircraft outside the windows and also displayed inside the cockpit if a light, single engine GA aircraft.
4/1	HQ wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
4/1	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.

FY-2017 ADS-B OUTREACH ACTIVITIES

4/4				Booth at Sun 'n Fun Expo	Booth at Sun 'n Fun Expo: FAA booth in the exhibit hall; FAA SME in the Aviation Safety Center; FAA seminar on ADS-B; FAA speakers at AOPA seminars on ADS-B(2); SNF radio interview discussing ADS-B.
4/4				Panel at Sun 'n Fun Expo	FAA Panel at Sun n' Fun Expo: FAA hosted panel with industry and FAA SMEs in the FAA Aviation Safety Center.
4/4				Panel at Sun 'n Fun Expo	AOPA Panel: AOPA hosted panel of industry and an FAA expert in the AOPA Forum.
4/4				Speaker at Sun 'n Fun Expo	FAA Speaker: Deputy Administrator Wassmer reinforced the ADSB mandate as part of her talking points at the "Meet the FAA Administrator" session.
4/4		Social media for SNF			AOC social media support for the FAA booth, ADS-B panel speakers, ADA Victoria Wassmer's "Meet the FAA Administrator" session, and the Equip ADSB web site.
4/4		Article for EAA Sport Aviation			Article in EAA Sport Aviation magazine titled "The Ins and Outs of ADS-B."
4/4		Article in AEA Avionics News			Article in AEA Avionics News: ADS-B Airspace, Is Your General Aviation Airport Inside or Near It?
4/4		Article in Sun 'n Fun Today			Article in Sun 'n Fun Today programs titled ADS-B Rebates Still Available
4/4		Article in Sun 'n Fun Today			Article in Sun 'n Fun Today: Top 10 Things You Need to Know About ADS-B
4/4		Article in Sun 'n Fun Today			Article in Sun 'n Fun Today: ADS-B Airspace, Is Your General Aviation Airport Inside or Near It?
4/4		Article in General Aviation News			Article published in GA News titled "Thinking of Waiting to Install ADS-B?"

FY-2017 ADS-B OUTREACH ACTIVITIES

4/5				Briefing to Florida DOT/Airports mtg.	Briefing/posters to FL DOT & airport steering committee: 200 copies of the new ADS-B promotion posters and an equal number of promotional post cards were distributed to the Florida airport steering committee and the Florida DOT for distribution to the 128 airports represented by the committee. They were asked to distribute to all FL airports.
4/5			New posters		Posters: Tactics group created two new promotion posters.
4/6			New web ads		Web ads: two new web ads created that look much like the new promotional posters.
4/12		FAAST email			FAAST Blast: GovDelivery message on new ADS-B issue (this message was resent to the 21,906 recipients who did not open the earlier message sent 3/2; 13% open rate, 4% click throughs.
4/20		FAAST email			FAAST Blast: Mention of ADS-B maintenance article "Getting it Right: What You Need to Know about ADS-B Installation Errors" in April 17-21 Blast.
4/28		Brochures at SNF			FAA distributed rebate handout materials.
4/28		Social media for CMA			Social media: Campaign advertized FAA booth at the Camarillo Fly-In and to drive traffic to the ADS-B Equip ADS-B web site.
4/28				Booth at AOPA Camarillo	Booth at Camarillo Fly-In: Exterior booth with SMEs set up with aircraft from Garmin and Appareo
4/29		Social media for National Small Business Week			AOC social media posts associating ADS-B with small business

FY-2017 ADS-B OUTREACH ACTIVITIES

4/30			New call sign web page		Equip ADSB web page: New section added to encourage aircraft owners to consider purchasing avionics that permits the call signs to be changed by the pilots when the aircraft is used in operations that required unique call signs to be used.
May					
5/1	SW Region mgrs. mtg.				Internal Mtg.: Weekly meetings with LOBs to discuss ADS-B outreach strategies and to develop and execute tactics.
5/1			New downloads web page		Equip ADS-B web page: A new page was added to make FAA posters and web ads that promote ADS-B equipage available for download by airport operators, businesses, and others.
5/1	HQ wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
5/1	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
5/1		Article for Avionics News			Avionics News: FAA Placed FAA article in this magazine titled "Everyone Loves a Rebate"
5/1		Article in ROTOR mag.			Article: David Gray authored article titled "Top 10 ADS-B Myths" published in HAI's magazine that was published in May/June.
5/2		Ads on many FAA web sites			FAA ad/link to EquipADSB landing page added to 10 FAA web pages.
5/4			Presentation for AOC-1		Presentation: ANG-F developed presentation to provide the ADSB outreach background and current efforts to the incoming Assistant Administrator for the FAA Office of Communications.

FY-2017 ADS-B OUTREACH ACTIVITIES

5/4		Social media for Star Wars Day			Social media posts showed the Millenium Falcon equipped with ADS-B.
5/6				Booth at Alaska Conf.	Booth at Alaska Conference: ATO SBS office booth with ADS-B SMEs at the Alaska state operators' conference.
5/15	GL Region mgrs. mtg.				Internal FAA Great Lakes Region Mtg: ANG provides ADS-B outreach briefing to the Regional Administrator and GL managers from the local LOB offices.
5/24		FAAST email			FAAST Blast: ADS-B Rebate stand alone SPANS notice.
5/25		Social media for Civil Air Patrol			Social media: AOC posted messages aligning ADS-B with the Civil Air Patrol.
5/30			Talking points for AFS-1		Talking points: ANG provided recommended talking points to AVS for inclusion in John Duncan's speech at NTAS.
June					
6/1	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts b-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
6/1	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
6/2		Brochures to FAAST FPMs			FAAST: 1200 ADS-B rebate brochures were distributed by AFS-850 to 20 FAASTeam managers for distribution at seminars.
6/2		Article in Avionics News			Avionics News magazine article: FAA placed article titled "ADS-B Rebate helps Operators Equip."
6/2		Ad on AvWeb			AvWeb advertizement: "See and Be Seen" added to the AvWeb site.
6/2		Article for AvWeb			AvWeb online: FAA placed an article related to the ADS-B rebate.

FY-2017 ADS-B OUTREACH ACTIVITIES

6/6			Pres./talking Points to all Ras		Presentation developed for ANG-F to socialize the ADS-B outreach activity with the Regional Administrators.
6/8	Central Region mgrs. mtg.				Internal Briefing: ADS-B outreach briefing by Tim Schroeder to the FAA Runway Safety Governance Council.
6/8			Talking points for APR-1		Talking points: ANG-F provided ADS-B presentation and talking points for Winsome Lenfer to use during the keynote address at the Western-Pacific Region's Airport Conference.
6/8			Presentation for APR-1		Presentation: ANG-F provided ADS-B presentation and talking points for Winsome Lenfer to use during the keynote address at the Western-Pacific Region's Airport Conference.
6/10	Outreach to FSDO mtg.				Outreach to FAA field inspectors: AFS-400 and 800 are working together to develop tactics for providing ADS-B equipage information to FSDO offices; intent is to have them put up the posters in their offices, and to be sufficiently familiar with HQ resources that they can refer questions to the right location or people.
6/12	VA DOT				ADS-B materials delivered by ATO PMO to VA Dept. of Aviation for distribution at an August conference with VA airports.
6/13				Speech at FAA West.-Pac Airports	Speech: Airports acting -1 keynote address at the FAA West-Pac Arpts. Conf.
6/13	All Regional Administrators mtg.				Briefing of all FAA Regional Administrators: ANG-F provided outreach update and encouraged the Ras to promote equipage and to disseminate the ADS-B posters.
6/13		FAAST email			FAAST Blast: Email with ERAU survey standalong SPANS message.
6/16		Presentation to Equip 2020 mtg.			Presentation developed by ANG-F to provide industry with an update on FAA outreach activities.

FY-2017 ADS-B OUTREACH ACTIVITIES

6/21	Equip 2020 Mtg.				Equip 2020 Group: Quarterly FAA-Industry meeting to discuss roadblocks to equipage; ANG-F briefs on FAA outreach activities.
6/21	Poster downloads to AEA				Posters: Download link sent to Aircraft Electronic Association for distribution to avionics shops.
6/21	Poster downloads to AOPA				"See And Be Seen" and "Don't Get Left in the Hanger" Posters: Download link sent to Aircraft Owners and Pilots Association for distribution to their respresentatives in the field and then on to GA airports.
6/26	AOPA e-newsletter				AOPA e-newsletter: AOPA published an article about the equipage rebate deadline
6/26	AEA e-newletter				AEA e-newletter: Aircraft Electronics Association published an article about the equipage rebate deadline.
6/27	EA Region mgrs. & state directors mtg.				Curtis Lineberry will provide Regional Outreach briefing to quarterly meeting between the Eastern Region Administrator's office and the aviation directors from the states within EA.
6/28	NAC Mtg.				NextGen Advisory Committee (NAC): RTCA hosted meetings with FAA and industry to discuss NAS modernization including ADS-B infrastructure and fleet equipage; FAA provides briefings on equipage numbers, and industry discussing equipage plans.
6/28	Outr. to Safety Inspectors				Outreach to FAA field inspectors: AFS-400 and 800 are working together to develop tactics for providing ADS-B equipage information to FSDO offices; intent is to have them put up the posters in their offices, and to be sufficiently familiar with HQ resources that they can refer questions to the right location or people.

FY-2017 ADS-B OUTREACH ACTIVITIES

6/29			Talking points for AOA		AOA talking points: ANG-F, ATO SBS, AVS, AOC, AFS worked together to prepare ADS-B talking points that could be used by the Administrator at the "Meet the FAA Administrator" session at Air Venture
July					
7/1	HQ Tactics Mtgs.				Internal FAA Mtgs.: ANG-F hosts bi-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
7/1	HQ Policies Mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
7/2		Article in Curt Lewis online			FAA article to be published in the July timeframe in the online newsletter published by Curt Lewis.
7/2		Article for EAA Sport Aviation magazine			Trade Magazine: FAA is working to place an ADS-B related article in this trade publication.
7/5		FAAST email			FAAST Blast: Email titled "Got ADS-B Questions? We've Got Answers!" was distributed to 263K email addresses by AFS-850.
7/5		Article in AINonline			AINonline: Published an article quoting ADA Elwell's reaffirmation of the ADS-B mandate along with supportive comments from AOPA and GAMA.
7/6		Article in FAA Daily Broadcast			Daily Broadcast: Article published for all FAA employee titled "FAA Deputy Administrator Reaffirms ADS-B Mandate"
7/7		Article in GovDelivery			GovDelivery mailing list: Article published via our GovDelivery mailing list (approx. 35,000 subscribers). We have the ability to add images with this. We added a link to Mar/Apr issue too.

FY-2017 ADS-B OUTREACH ACTIVITIES

7/11		Article in Aircraft Maint. Tech. Daily			Article: Aircraft Maintenance and Technology Daily online published and article promoting the Twitter Chat.
7/11			Present. for ASW/Arpts.		Outreach presentations and talking points updated for a meeting on 7/13 with the SW Regional Administrator and the airports within the region.
7/13				Speaker at Avionics Mag. webinar	FAA Speaker: Avionics Magazine annual hosts a webinar to discuss ADS-B avionics issues. Jim Marks, AFS-360 will participated in 2017.
7/13		Email to FFAST list			Email send out to over 250,000 email addresses promoting the ADS-B rebate and deadline for reservations.
7/19		Twitter Chat			FAA-hosted Twitter Chat with subject matter experts from FAA, AOPA, AEA, etc.
7/24			New brochure		FAA brochures: ANG-F is developing a new twelve page brochure with information and articles about ADS-B equipage and the incentive rebated for distribution at AirVenture.
7/24		Article for AirVenture Today			FAA article placed in the AirVenture daily newspaper (20,000 copies): Article titled "ADS-B Airspace: Is Your General Aviation Airport Inside or Near It?", originally published in Sun n Fun Daily, will be published by AirVenture Today during the airshow.
7/24		Social media for OSH			Social media campaign to support FAA ADS-B Outreach activities at AirVenture including the FAA booth at the FAA Safety Center, speakers at the Safety Center forum, two AOPA Forums, EAA Radio interview, and the Equip ADS-B web page.

FY-2017 ADS-B OUTREACH ACTIVITIES

7/24				Booth at Oshkosh	FAA Booth: FAA booth in Safety Center with six FAA ADS-B experts and communications staff to provide social media outreach, handouts, demonstrations, rebate reservations, performance checks, and answers to questions.
7/24		Article for AEA Pilot's Guide to Avionics			AEA Pilot's Guide to Avionics article: Is Your ADS-B Equipment Working Correctly?
7/24		Article for AEA Pilot's Guide to Avionics			AEA Pilot's Guide to Avionics article Article: ADS-B Rebate Helps Operators Equip
7/24		Article for AEA Pilot's Guide to Avionics			AEA Pilot's Guide to Avionics article: ADS-B Airspace, Is Your General Aviation Airport Inside or Near It?
7/24		AOPA email to arpts.			AOPA email to their Airport Support Network volunteers: A digital newsletter that AOPA sends out regularly to their Airport Support Network volunteers, of which there are 2,250 volunteers providing information to 2,250 separate airports; the edition will go out the week of Oshkosh; the message will pass on the "Dont Get Left in the Hanger" message along with a request that they download and post the posters at FBOs, etc.
7/25				Seminar at Oshkosh	FAA Speaker: FAA SME from AFS-360 participation on an ADS-B panel to discuss ADS-B installations in the AOPA Forum.
7/26				Seminar at Oshkosh	FAA Seminar: FAA hosted panel featured FAA's Bobby Nichols and Industry reps from leading trade associations AOPA, EAA, GAMA discussing equipage requirements, solutions, policies
7/27				Seminar at Oshkosh	FAA Speaker: FAA SMEs from ATO SBS participation on an ADS-B panel in the AOPA Forum.
7/27				Radio interview	EAA Radio: ATO SBS manager radio interview about ADS-B..

FY-2017 ADS-B OUTREACH ACTIVITIES

7/x	Trade Assn. Mtgs.: HAI, NBAA, NATA.				Regional Outreach with business aviation focus: NBAA, NATA, HAI will meeting (separately) to discuss how Industry can assist in this outreach effort.
7/x		Posters for FSDOs			Posters: Two new posters promoting equipage and the web site, along with a letter of encouragement from HQ, will be distributed to all 88 FSDOs for office display, along with an email communications to all AFS Safety Inspectors.
7/x			Flyer from chart publishers		Flyers from printers: FAA is working with the printers that are authorized by the FAA to print charts and plates; the intent is to insert an ADS-B flyer into the envelopes.
7/x			Video for FAA online publication		Video: Will feature Jim Linney and Jamal Wilson at an airport discussing ADS-B equipage.
August					
8/1	HQ Tractics Mtgs.				Internal FAA Mtgs.: ANG-F hosts b-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
8/1	HQ Policies Mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
8/6				WV Av. Conf.	West Virginia Aviation Conference August 6 - 8 at Mountain Resort, Snowshoe, WV
8/14				Speaker at NTAS	FAA Speaker: John Duncan speaking about several subjects at the National Training Aircraft Symposium including ADS-B.
8/x		FAAST email			FAAST Blast: Email from the Rebate Program office with ADS-B rebate deadline information.

FY-2017 ADS-B OUTREACH ACTIVITIES

8/x	NATA email				NATA email: Possible email with information about "Call Sign Mismatch" to be distributed by email to ADS-B article for their ABI publication to reach 24,000 pilots and DOMs for corporate aviation.
September					
9/1	HQ Tactics Mtgs.				Internal FAA Mtgs.: ANG-F hosts bi-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
9/1	HQ Policies Mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
9/6				Speaker-AEA Connect West	Panel: Jim Marks, AFS-360 attending this conference of avionics installers in Reno; He will talk about ADS-B equipment installations during a panel session.
9/8				Booth-AOPA-Norman	Booth:
9/8				Speaker-AOPA-Norman	Panel: ADS-B seminar, hosted by AOPA, with manufacturers discussing ADS-B equipage issues.
9/9				Speaker-NASAO Conference	FAA speaker: FAA to host a session for state directors, senior staff, and contractors to provide an ADSB Equipage update, challenges to equipage, actions NASAO members can take to outreach to airports operators, business, owners, and operators.
9/11				Mtg.-NASAO Board of Directors	FAA briefing: to the NASAO state aviation directors.
9/13				Assn. of CA Airports Annual Conf.	FAA speaker: Session TBD to provide CA state aviation officials and CA airports operations with an update on ADS-B equipage.

FY-2017 ADS-B OUTREACH ACTIVITIES

9/13				Mtg.-CA DOT & Airports	Regional outreach briefing to the CA department of aviation and airport representatives.
9/18				Speaker at AEA Connect East	
9/18				Speaker at AEA U.S. Connect EAST	FAA speaker: FAA 's Jim Marks to provide a updated on ADS-B equipage and installation challenges to this conference of avionics installers.
9/20	Equip 2020 mtg.				Equip 2020 Group: Quarterly FAA-Industry meeting to discuss roadblocks to equipage; ANG-F briefs on FAA outreach activities.
9/26				Mass. Airports Conf.	Massachusetts Airports Conference is being held in Amherst, MA. We would ask for a space on the agenda if we have a speaker most likely from the Focus Group team.
9/27				Kentucky Av. Conference	Kentucky Aviation Conference September 27-29 in Lexington. We would ask to meet with the airport operators and state DOT if we have a speaker.
9/30				Speaker at Orlando Ft. Schools mtg.	Orlando FL FSDO has periodic meetings with the flight academies. They would like to have someone attend the meeting to talk about equipage.
9/x		FAAST email			FAAST Blast: Email from the Rebate Program office with ADS-B rebate deadline information.
Red Print = Activities that are tentative; they will be deleted if not completed.					

FY-2018 ADS-B OUTREACH PLAN

FY 2018 ADS-B Outreach Activities to General Aviation					
Date	Collaborations	Media	Education Services & Products	Events	Description
Multiple Segment Activity	Industry Association Mtgs.				<p>FAA briefings to Industry trade associations: FAA meeting with association executives that are ADS-B equipage stakeholders (by virtue of their participation in Equip 2020) that have an interest in aiding aircraft owners and operators in the transition and compliance with the mandate. Meetings provide opportunity for FAA to provide a review of the agency's outreach efforts, for associations to review their outreach efforts and related concerns of their members, and to discuss ways government and industry can work together to help aircraft owners and operators comply with the mandate. Associations may include: AOPA, EAA, HAI, NATA, NBAA and intermediary associations include: AEA, AAAE, ACI-NA and NASAO.</p>
Recurring Activity					

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Recurring Activity			95 FFAST seminars		FAA Team safety seminars: Each of the 95 FFAST Program Managers is tasked by AFS-850 to conduct at least one ADS-B seminar per year using the presentation prepared by ANG-F.
Recurring Activity			Education Services		Services provided at FAA booths at outreach events: Where the FAA has an exhibit booth, subject matter experts are available to answer questions and to provide on the spot services including: ADS-B Out equipment performance checks, rebate reservations, regulatory information, airspace tutorial, cockpit traffic display demonstration and FAQs.
Recurring Activity			Rebate incentive		FAA incentive rebate: \$500 rebate launched September 19, 2016 and concluded September 18, 2017; Program is limited to 12 months and 20,000 rebates; Staff provided on-site rebate reservations at outreach events with FAA exhibit booths and staff; As of June 16, 6329 reservations had been made and 4942 claimed.

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					EquipADSB: The agency's one-stop online source of information related to ADS-B rule, equipage, installation, benefits; web site is updated on an ongoing basis to add new information.
<i>Recurring Activity</i>			<i>EquipADSB web site</i>		
				<i>Regional Outr. mtgs.</i>	<i>Schedule meetings with Airports reps & State Av. Depts. From critical states of CA, CN, DE, FL, MD, NJ, NY, PA, RI, TX, VA. Critical areas airport mtgs.</i>
October					
10/4	NAC mtg.				<i>Meeting: To Industry: Briefing on equipage numbers; dialog about air carriers' equipage plans.</i>
10/6				Booth-AOPA GON	<i>AOPA Fly-In: Groton, CN: FAA will staff a booth with SMEs to provide information about the rule, airspace, equipment, installations, benefits, and to conduct rebate registration and performance checks.</i>
10/6				Speaker-AOPA GON	<i>AOPA Fly-In: In Groton, CN, FAA will host a booth and participate on a seminar panel of SMEs.</i>
10/10				Booth-NBAA	<i>NBAA Annual Convention and Trade Exhibition October 10-12 in Las Vegas, NV: FAA will host a booth of SMEs.</i>
				Speaker-NBAA	

FY-2018 ADS-B OUTREACH PLAN

10/15				ATCA	ATCA annual conference: Washington DC area (Gaylord) October 15-19. NextGen both will include information about NextGen.
10/15				Louisiana Airport conf.	Louisiana Airport Managers & Associates Conference October 15-17 in Natchitoches, LA.
10/17				Mtg.-FL DOT & Airports	Follow up mtg.: Possible follow up meeting with FL DOT and airports
10/27				Mtg.-FSDO & FL Airports	Mtg. with academies: MCO FSDO requesting ADS-B briefing at one of their regular meetings with the local flight academies.
10/27				Booth-AOPA TPA	
10/27				Speaker-AOPA TPA	AOPA Fly-In: Fly-in in Tampa October 27-28. FAA will host a booth and participate on a panel focused on ADS-B issues.
10/x/17	Regional Administrator briefing				RA briefing: RA's will be provided an briefing on the entire FY18 outreach plan along with Focus Team recommendations for disseminating the posters and promoting outreach and compliance.
10/x/17	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts b- weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.

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10/x/17	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
November					
11/1	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
11/15				Speaker-Avionics for NextGen	Avionics for NextGen conference in Dulles, VA on November 15 and 16
11/x/17	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts bi-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.

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December					
12/6	Equip 2020 qtly. mtg.				Quarterly FAA-Industry meeting to discuss roadblocks to equipage, briefing on FAA outreach activities.
12/31					
12/x/17	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts b-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
12/x/17	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
January					
1/x/18	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts b-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.

FY-2018 ADS-B OUTREACH PLAN

1/x/18	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
February					
2/x/18	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts bi-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
2/x/18	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
2/x/18	NAC mtg.				Meeting with all segments of NAS users; briefing on equipage numbers; dialog about air carriers' equipage plans.
March					

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3/x/18	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts bi-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
3/x/18	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
3/x/18	Equip 2020 qtly. mtg.				FAA briefing on ADS-B equipage numbers, outreach activities, policies.
April					
4/10				Booth at Sun 'n Fun Expo	FAA Booth: ADS-B exhibition hall booth
4/10				Panel at Sun 'n Fun Expo	FAA Panel with FAA and Industry speakers:
4/10				Panel at Sun 'n Fun Expo	AOPA seminar with FAA speaker:
4/10				Speaker at Sun 'n Fun Expo	FAA seminar with FAA executive speaker: Administrator or ADA to reinforce the ADSB mandate as talking points at the "Meet the FAA Administrator" session.

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4/10		Social media for SNF			AOC social media support for the FAA booth, ADS-B panel speakers, ADA Victoria Wassmer's "Meet the FAA Administrator" session, and the Equip ADSB web site.
4/10		Article for EAA Sport Aviation			Article in EAA Sport Aviation magazine
4/10		Article in AEA Avionics News			Article in AEA Avionics News:
4/10		Article in Sun 'n Fun Today			Article in Sun 'n Fun Today
4/10		Article in Sun 'n Fun Today			Article in Sun 'n Fun Today
4/10		Article in Sun 'n Fun Today			Article in Sun 'n Fun Today
4/10		Article in General Aviation News			Article in General Aviation News
4/10				Briefing to Florida DOT/Airports mtg.	Briefing/posters to FL DOT & airport steering committee for distribution to 128 airports in FL
4/1		FAAST email			FAAST Blast: GovDelivery message on new ADS-B issue (this message was resent to the 21,906 recipients who did not open the earlier message sent 3/2; 13% open rate, 4% click throughs.
4/10		FAAST email			FAAST Blast: Mention of ADS-B maintenance article "Getting it Right: What You Need to Know about ADS-B Installation Errors" in April 17-21 Blast.
4/10			Brochure		Rebate handout materials

FY-2018 ADS-B OUTREACH PLAN

4/x/18		Social media for AOPA FLY-IN			Social media: Campaign advertized FAA booth at the Fly-In and to drive traffic to the ADS-B Equip ADS-B web site.
4/x/18				Booth at AOPA Fly-In	Booth: FAA SMEs provide answers, demos, materials to aircraft owners and operators.
4/x/18	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts bi-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
4/x/18	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
4/x/18		Social media for National Small Business Week			AOC social media posts associating ADS-B with small business
May					
5/1	SW Region mgrs. mtg.				Internal Mtg.: Weekly meetings with LOBs to discuss ADS-B outreach strategies and to develop and execute tactics.
5/1					
5/1		Article for Avionics News			Avionics News: FAA Placed FAA article in this magazine

FY-2018 ADS-B OUTREACH PLAN

5/2					
5/4					
5/4					
5/15	GL Region mgrs. mtg.				Internal Mtg: ADS-B outreach briefing to the RA and managers from all local LOBs
5/24		FAAST email			FAAST Blast:
5/25		Social media for Civil Air Patrol			Social media: AOC posted messages aligning ADS-B with the Civil Air Patrol.
5/30					
5/x/18	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts bi-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.
5/x/18	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
June					
6/2		Brochures to 20 FAAST FPMs			FAAST: 1200 ADS-B rebate brochures were distributed by AFS-850 to 20 FAASTeam managers for distribution at seminars.
6/2		Article in Avionics News			Avionics News magazine article
6/2		Ad on AvWeb			AvWeb advertizement:

FY-2018 ADS-B OUTREACH PLAN

6/2		Article for AvWeb			AvWeb online:
6/6					
6/8	Central Region mgrs. mtg.				Internal Briefing: ADS-B outreach briefing to the FAA Runway Safety Governance Council.
6/8		Talking points for APR-1			Talking points: ANG-F provided ADS-B presentation and talking points for keynote address at the Western-Pacific Region's Airport Conference.
6/8		Presentation for APR-1			Presentation: ANG-F provided ADS-B presentation and talking points for Winsome Lenfer to use during the keynote address at the Western-Pacific Region's Airport Conference.
6/13				Speech at FAA West.-Pac Airports	Speech: FAA West-Pac Arpts. Conf.
6/13	All Regional Administrators mtg.				Briefing of all Ras: Anna provided outreach update and encouraged the Ras to promote equipage and to disseminate the ADS-B posters
6/13		FAAST email			FAAST Blast:
6/13		Presentation for Ras			Presentation: Prepared by ANG-F to present the status of ADS-B Outreach to a VTC with FAA Regional Administrators.
6/16			Presentation to Equip 2020 mtg.		Presentation developed by ANG-F for Anna Allen to provide industry with an update on FAA outreach activities.
6/21					
6/21					

FY-2018 ADS-B OUTREACH PLAN

6/26	AOPA e-newsletter				AOPA e-newsletter:
6/26	AEA e-newsletter				AEA e-newsletter:
6/27	EA Region mgrs. & state directors mtg.				Regional Outreach briefing to quarterly meeting between the Eastern Region Administrator's office and the aviation directors from the states within EA.
6/29		AOA talking points			AOA talking points: ANG-F in coordination with AOC, ATO SBS, AFS-400, AFS-360 developed talking points on ADS-B for the Administrator to use at AirVenture.
6/x/18		FAAST email			FAAST Blast:
6/x/18	Equip 2020 Mtg.				FAA-Industry mtg.: dialog with industry trade representatives to discuss impediments to equipage during the meeting of the GA Work Group 2.
6/x/18	NAC mtg.				FAA-Industry mtg.: Meeting with all segments of NAS users; briefing on equipage numbers; dialog about air carriers' equipage plans.
6/x/18	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts bi-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.

FY-2018 ADS-B OUTREACH PLAN

6/x/18	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
July					
7/23		Article for AEA Pilot's Guide to Avionics			AEA Pilot's Guide to Avionics article Article:
7/2		Article in Curt Lewis online			FAA article to be published in the July timeframe in the online newsletter published by Curt Lewis.
7/2		Article for EAA Sport Aviation magazine			Trade Magazine: FAA is working to place an ADS-B related article in this trade publication.
7/2		Video for FAA online publication			Video:
7/13				Speaker at Avionics Mag. webinar	FAA Speaker: Avionics Magazine annual hosts a webinar to discuss ADS-B avionics issues.
7/19		Twitter Chat			FAA-hosted Twitter Chat with subject matter experts from FAA, AOPA, AEA, etc.
7/23			Brochure		New brochure for handout at EAA and other events.
7/23			Table posters		Table posters: 20 11x17 posters distributed to Equip 2020 members exhibiting at EAA.

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7/23		Article for AirVenture Today			FAA article placed in the AirVenture daily newspaper (20,000 copies)
7/23		Social media for OSH			Social media campaign to support FAA ADS-B Outreach activities at Sun n Fun including the FAA booth at the Safety Center, speakers at the Safety Center and AOPA Forum, and the Equip ADS-B web page;
7/23				Booth at Oshkosh	FAA Booth: FAA booth in Safety Center with FAA ADS-B experts, media, and services
7/23		Article for AEA Pilot's Guide to Avionics			AEA Pilot's Guide to Avionics article:
7/23		Article for AEA Pilot's Guide to Avionics			AEA Pilot's Guide to Avionics article:
7/23				Seminar at Oshkosh	AOPA Seminar with FAA Speaker:
7/23				Seminar at Oshkosh	AOPA seminar with FAA Speaker:

FY-2018 ADS-B OUTREACH PLAN

7/23		AOPA email to arpts.			AOPA email to their Airport Support Network volunteers: A digital newsletter that we send out regularly to our Airport Support Network volunteers, of which we have 2,250 - so this would get to 2,250 separate airports. Our next edition goes out the week of Oshkosh with all inputs needing to be compiled next Friday. I have been given some space for a blurb so take a look below and let me know what you think. The message will pass on the "Dont Get Left in the Hanger" message along with a request that they download and post the posters at FBOs, etc.
7/23				Seminar at Oshkosh	FAA Seminar: FAA hosted panel FAA and Industry reps discussing equipage requirements, solutions, policies
7/23				Radio interview	EAA Radio: interview about ADS-B; POC is Paul Priedecker.
7/x/18	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts b-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.

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7/x/18	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
August					
8/x/18	HQ bi-wkly. tactics mtgs.				Internal Mtgs.: Bi-weekly meetings with LOBs to discuss ADS-B outreach strategies and to develop and execute tactics.
8/x/18	HQ wkly. policies mtgs.				Internal Mtgs.: Weekly LOB meetings to discuss Equip 2020 action items and ADS-B policies.
September					
9/x/18	HQ bi-wkly. tractics mtgs.				Internal FAA Mtgs.: ANG-F hosts b-weekly meetings with FAA offices involved in ADS-B outreach to discuss communications strategies and to develop/execute tactics.

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9/x/18	HQ wkly. policies mtgs.				Internal FAA Mtgs.: AFS-430 hosted weekly meetings with the FAA HQ offices that attend Equip 2020 meetings to discuss Equip 2020 action items and agency policies related to ADS-B.
9/x/18	Equip 2020 mtg.				FAA briefing on ADS-B equipage numbers, outreach activities, policies.
9/x/18		Social media for AOPA FLY-IN			Social media: Campaign advertized FAA booth at the Fly-In and to drive traffic to the ADS-B Equip ADS-B web site.
9/x/18				Booth at AOPA Fly-In	Booth: FAA SMEs provide answers, demos, materials to aircraft owners and operators.
9/x/18		Social media for AOPA FLY-IN			Social media: Campaign advertized FAA booth at the Fly-In and to drive traffic to the ADS-B Equip ADS-B web site.
9/x/18				Booth at AOPA Fly-In	Booth: FAA SMEs provide answers, demos, materials to aircraft owners and operators.
Red Print = Activities that do not have agency resource committments.					