



Better Briefings, Safer Flights

October 23, 2014

LOCKHEED MARTIN

Dr. Weener, FPAW Keynote Address July 22

- Part 91 Fatal Accidents 2008-2012
 - (1) Loss of Control In Flight ("frequently preceded by a weather event")
 - (5) VFR Encounter with IMC
- NTSB Most Wanted List
 - (1) General Aviation: Identify and [Effectively] Communicate Hazardous Weather
- Areas of Concern
 - (1) The Overall ATC/Pilot/Met Culture
 - (4) PIREPs
- Importance of improving the PIREP "system" in the NAS
 - Pilots increase volume of PIREPs and ensure reporting is accurate and detailed
 - FAA major changes to the way PIREPs are handled, ensuring more timely and accurate weather related information is received by the pilot

Briefings

Traditional Online Briefings

VoluminousArchaic PresentationDifficult to Assimilate

Pilots Still Call Specialists

Regulatory Compliance *≠* **Safety**

Common SOP: Check the Box – Print 50 Pages and Throw in Flight Bag, "Brief" some other way

NextGen Briefings

- Make briefings valuable
- Easier/faster to read and understand
- Using graphics, automatic summarization, smart plain text translation, filtering, automatic time analysis...
- Make self-service environment viable for larger number of pilots

Typical METAR Data

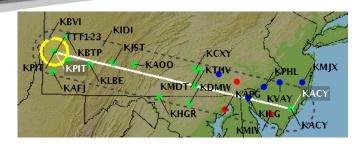
METAR KAOO 082353Z AUTO 22017G27KT 10SM OVC085 14/09 A2993 RMK AO2 PK WND 23031/2337 RAE43 SLP135 P0001 60013 T01440089 10167 20128 58025 METAR KJST 082354Z AUTO 21016G25KT 6SM -RA BR FEW008 OVC012 11/09 A2992 RMK AO2 PK WND 22029/2337 SLP134 P0001 60027 T01060094 10122 20106 56021 SPECI KJST 090014Z AUTO 22016G26KT 6SM -RA BR BKN008 OVC013 10/09 A2991 RMK AO2 PK WND 21026/0005 CIG 006V009 P0000 no reports available for HMZ METAR KCBE 082355Z AUTO 16004KT 10SM SCT065 SCT100 16/10 A3000 RMK AO1 METAR KCBE 090016Z AUTO 17004KT 10SM SCT090 16/10 A3000 RMK AO1 METAR K2G4 082355Z AUTO 21014G19KT 10SM BKN019 OVC024 10/08 A2999 RMK AO1 METAR K2G4 090015Z AUTO 21016G26KT 10SM BKN019 OVC024 10/08 A2998 RMK AO1 METAR KW99 082355Z AUTO 21008KT 10SM BKN080 BKN090 18/08 A3001 RMK AO2 T01840082 10227 20175 METAR KW99 090015Z AUTO 19006G17KT 10SM BKN080 BKN090 19/08 A3001 RMK AO2 T01850082 METAR KW99 090035Z AUTO 20008G17KT 10SM BKN080 OVC100 18/08 A3000 RMK AO2 T01820082 METAR KEKN 082351Z AUTO 16006KT 10SM BKN060 OVC090 13/09 A3004 RMK AO2 RAE43 SLP176 P0000 60002 T01280089 10194 20122 58013 TSNO METAR KW22 082355Z AUTO 20012G19KT 10SM FEW055 13/10 A3002 RMK AO2 METAR KW22 090015Z AUTO 21012G23KT 10SM -RA FEW032 SCT042 BKN048 13/09 A3002 RMK A02 METAR KW22 090035Z AUTO 22013G21KT 5SM HZ BKN033 OVC041 13/10 A3003 RMK A02

NGB METARs – Overview Page

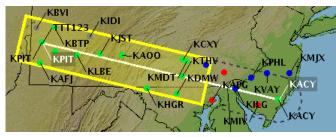
Rou	ute brief	for VFR TT	T123 C13	0/C PIT	072000 045 ACY	0600 ALT1: MJ	X 50nm				* 😔 🖣
Adv	/erse Co	nd Synop	sis Curre	ent Wx	Forecasts NOTA	Ms Flow Contro	ol (0) Mis	sc All			
ME	TAR PI	REP									
ST		NEXTG	EN			Previous	1 of 6	Next		5 10 15 20 25 30 35 40 45 50	55 60 65 70 75 dBZ
Au	tomatio	n Summari	zation - MI	ETARs					٦I	LGT MOD HVY	EXTRM
Us	se the N	lext Butto	n to step	throug	gh different secti	ions of the ME	TAR repo	orts			CR 071930Z
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Rou	ute:										
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•	VFR	KAFJ	071915Z		26011G19KT 105 RMK AO1	SM FEW037 BKN	060 14/0	5 A2996		-7707123	Sector -
۲	VFR	KBTP	071915Z		24012G23KT 10S 13/05 A2994 RMF		041 OVC	050	=	KPIT	
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•	UNKN	KIDI	071915Z	AUTO	29011G18KT 105	GM 13/07 A2992	RMK AO	2		~~ s MANA	
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•	VFR	KAOO	071853Z		27015G20KT 105 A2989 RMK AO2 T01440083					State 6	61
۲	VFR	KHGR	071853Z		26005KT 10SM B SLP123 T0167013		2988 RMF	< AO2		Slow Fast	Ctrl + left click and drag
•	VFR	KCXY	071856Z		29005KT 10SM -F 16/14 A2987 RMF T01610144					All METAR/SPECI Summarized Wx Depiction	to select an area to zoom
•	VFR	KDMW	071925Z	AUTO	25004KT 10SM 0	VC043 15/13 A	2990 RMI	K AO2			
۲	VFR	SP KTHV	071909Z		24003KT 10SM F A2987 RMK AO2		OVC060	16/14		VFR MVFR IFR Unknown	
•	VFR	KMDT	0718567		31007KT 95M -R		32 BKN0	55	-		

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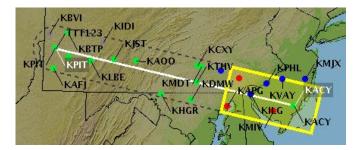
NGB METAR Summaries



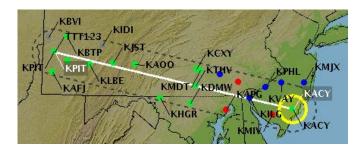
Current conditions at Pittsburg International, Pittsburg, PA, VFR, Wind at 270 11 knots with gusts to 22 knots, 10 miles visibility, Ceiling is Broken at 3600 feet, Overcast at 5000 feet, Temperature 15°C, Dewpoint 6 °C, Altimeter is 29.91



Mostly VFR with some MVFR through Lancaster, Lancaster, PA, with ceilings as low as 2000 feet, Widely Scattered Light Rain



IFR and **MVFR** through South Jersey Rgnl, Mount Holly, NJ, with ceilings as low as **600 feet**, widespread Heavy Rain and Mist, visibility as low as **1 mile**



Current conditions at Atlantic City, International, Atlantic City NJ, VFR, wind at 190 18 knots with gusts to 28 knots, 10 miles visibility, Few clouds at 1800 feet, Ceiling is Broken at 7000 feet, Temperature 24°C, Dewpoint 20°C, Altimeter is 29.85

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Typical TAF Data

TAF AMD KAOO 090024Z 0900/0924 22017G27KT P6SM OVC090
 WS020/23040KT
 FM090200 27015G25KT 5SM -SHRA BR OVC015
 FM090500 30010G15KT P6SM SCT025
 FM091400 29015G25KT P6SM BKN035
TAF AMD KJST 090024Z 0900/0924 22016G26KT 6SM -RA BR BKN008 OVC013
 FM090400 29015G25KT P6SM BKN015
 FM090700 28010KT P6SM SCT025
 FM091500 28015G25KT P6SM BKN025
TAF KEKN 082334Z 0900/0924 18005KT 6SM -SHRA SCT025 OVC040 TEMPO
 0906/0909 VRB10G22KT 4SM -SHRA SCT015 BKN035
 FM090900 32010KT 4SM -SHRA BR SCT008 OVC015
 FM091400 28007KT P6SM BKN035
 FM091700 28012G18KT P6SM SCT250

NGB TAF Presentation

Route brief for VFR TTT123 C130/C AGC 071820 045 ACY 0600 50nm

rea Forecas	t Terminal Forecast Winds Aloft	
STANDARD		Terminal Area Forecasts on Terrain & Color Map
Automation	Summarization - TAFs	A CARLES AND A CARLES A
relevant T/	cted flight time and filed speed have been used to identify the most AF forecast information for your flight. These times do not include vind speed.	
20:00z	VFR FM072000 28013G22KT P6SM SCT023 BKN040 VFR FM080000 29010KT P6SM SCT060 =	A AREN VILLE
20:20z	VFR TAF KILG 071724Z 0718/0818 20018G28KT 6SM -SHRA SCT020 OVC050	and the states of the states
+40min →	MVFR TEMPO 0718/0721 3SM +SHRA BR 0VC020 VFR FM072100 24010KT P6SM -SHRA 0VC040 VFR FM072300 28010KT P6SM BKN060 VFR FM080200 32008KT P6SM SCT060	KPM
	VFR FM080300 33005KT P6SM SKC VFR FM081400 35006KT P6SM SKC =	KAGC TTT123 KIST KENS 20:002 KIEG - 20:502
20:30z	MVFR TAF KPHL 071724Z 0718/0824 22015G25KT 5SM -SHRA BR BKN025 OVC040	KACY KACY
-30min → +30min →	IFR TEMPO 0718/0720 2SM +SHRA BR OVC010 VFR FM072100 24010KT P6SM -SHRA OVC040	
	VFR FM072300 28010KT P6SM BKN060	
	VFR FM080200 32008KT P6SM SCT060 VFR FM080300 33005KT P6SM SKC	
	VFR FM081400 35006KT P6SM SKC =	
20:40z	VFR TAF KMIV 071724Z 0718/0818 18012G20KT P6SM VCSH SCT020 OVC040	191 UN 191 3137
	IFR TEMPO 0719/0722 2SM +SHRA BR OVC012	South Marine Street
	VFR FM072200 24010KT P6SM -SHRA OVC040 VFR FM080000 28010KT P6SM BKN060	
	VFR FM080000 20010KT P6SM BKN000	
	VFR FM081400 01006KT P6SM SKC =	72
20:50z	MVFR TAF KACY 071724Z 0718/0818 19015G25KT P6SM VCSH BKN015 OVC030	Animate Wx Configure Map Supplemental Wx
	IFR TEMPO 0720/0723 2SM +SHRA BR OVC012	VFR MVFR IFR LIFR Unknown Passing Time
	VFR FM072300 24010KT P6SM -SHRA OVC040 VFR FM080100 29010KT P6SM BKN060	-1 hour +1 hour
	VFR FM080300 33006KT P6SM SCT060	Color-coding based on ceiling and visibility only
	VFR FM081400 02010KT P6SM SKC =	

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October 23, 2014 - Page 8

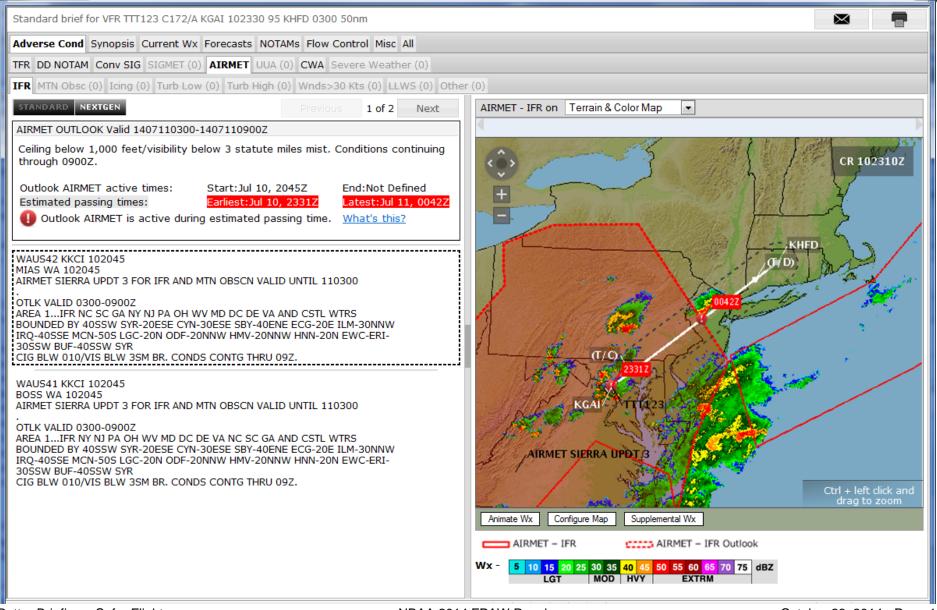
Typical AIRMET Outlook Data

WAUS42 KKCI 102045 MIAS WA 102045 AIRMET SIERRA UPDT 3 FOR IFR AND MTN OBSCN VALID UNTIL 110300 .

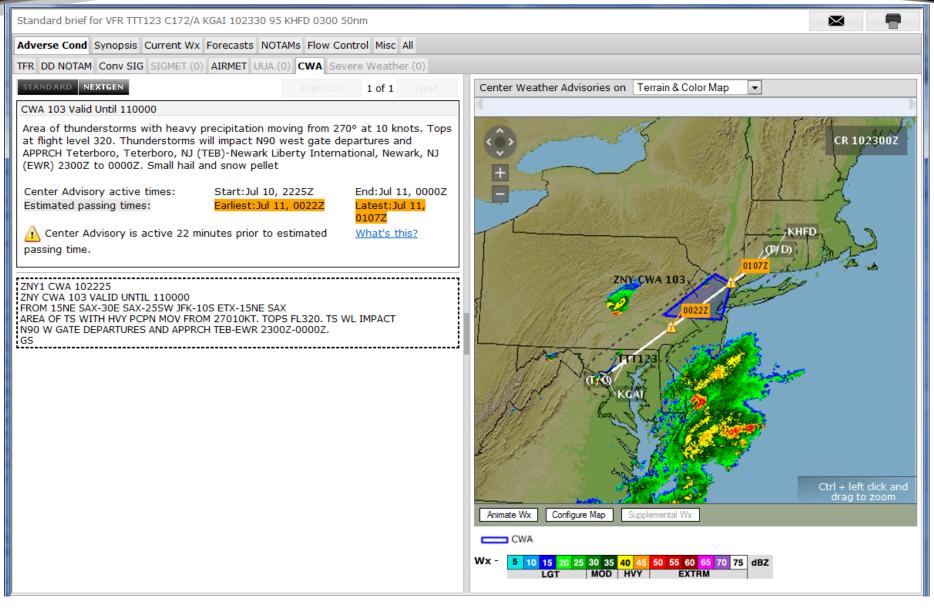
AREA 1...IFR NC SC GA NY NJ PA OH WV MD DC DE VA AND CSTL WTRS BOUNDED BY 40SSW SYR-20ESE CYN-30ESE SBY-40ENE ECG-20E ILM-30NNW IRQ-40SSE MCN-50S LGC-20N ODF-20NNW HMV-20NNW HNN-20N EWC-ERI-30SSW BUF-40SSW SYR CIG BLW 010/VIS BLW 3SM BR. CONDS CONTG THRU 09Z. WAUS41 KKCI 102045 BOSS WA 102045 AIRMET SIERRA UPDT 3 FOR IFR AND MTN OBSCN VALID UNTIL 110300

OTLK VALID 0300-0900Z

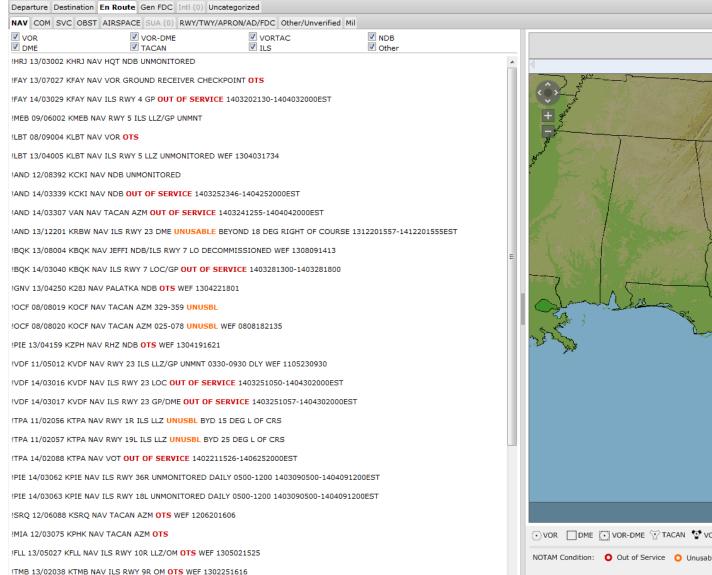
Adverse Conditions - AIRMET Outlook



Center Weather Advisory



Unfiltered Navaid NOTAMs





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Filtered Navaid NOTAMs

Departure Destination En Route Gen FDC Intl (0) Uncategorized

NAV COM SVC OBST AIRSPACE SUA (0) RWY/TWY/APRON/AD/FDC Other/Unverified Mil

 VOR
 VOR-DME
 VORTAC
 NDB

 DME
 TACAN
 ILS
 Other

IFAY 13/07027 KFAY NAV VOR GROUND RECEIVER CHECKPOINT OTS

ILBT 08/09004 KLBT NAV VOR OTS

!TPA 14/02088 KTPA NAV VOT OUT OF SERVICE 1402211526-1406252000EST

IHST 14/08001 KHST NAV HST TEST

IGPS 14/03139 KGPS NAV PSEUDO RANDOM NOISE 32 OUT OF SERVICE 1404010800-1404012000 (Not Depicted On Graphics)

IMZG 13/09001 KMZG NAV GROUND BASED TRANSCEIVER OTS WEF 1309092343 (Not Depicted On Graphics)



Departure Advisor

Time Options	ton the	they	4MD	think	41/2	, 4 ¹ / ₁ 0	431AL	4 PC
0900Z	VV	M	M			0		M
1000Z	VV	M	M			0		M
1100Z	V V	M	M					M
1200Z	VV	V	M	M		0		M
1300Z	VV	V	M	M				
1400Z	VV	V	V	M	M			
1500Z	VV	V	V	M	M	M	<i>////</i>	
1600Z	VV	V	V	V	M	M	M	
1700Z	VV	V	V	V	V	M	M	M
1800Z	VV	V	V	V	V	V	V	M
1900Z	V V	V	V	V	V	V	V	V

Flight Service Data Link

- Bi-directional electronic communications with cockpit
- Provides infrastructure for a wide range of applications
- Pathway to handle routine flight service communications with automation



Spidertracks



Honeywell



DeLorme

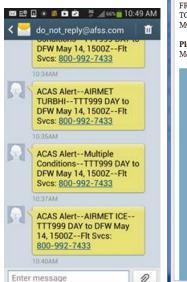


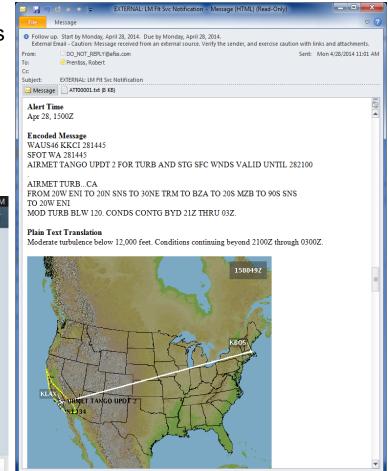
Garmin

Adverse Condition Alerting Service (ACAS

- Free service, operational since October 2012
- Monitors flight plans after briefing/file, sends alerts to pilots for new or modified adverse conditions
 - TFRs, Closed/Unsafe Airports/Runways, SIGMETs Convective SIGMETs, AIRMETs, CWAs, Urgent PIREPs, Severe Wx Warnings & Watches
- Preflight delivery via Email, text msg,
- Inflight delivery via SATCOM devices: spidertracks, Honeywell Sky Connect, DeLorme, Garmin

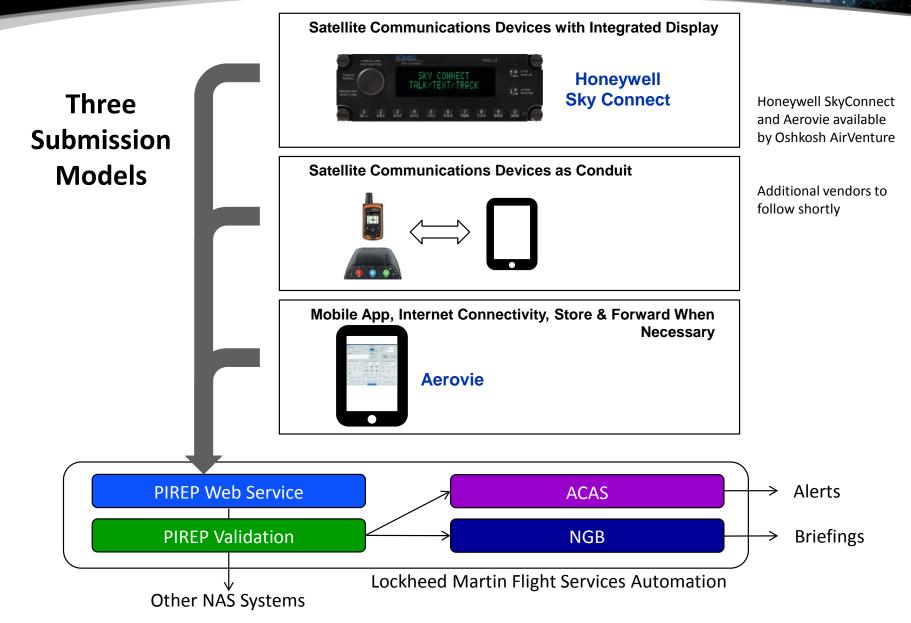
43% of surveyed pilots said there were adverse conditions they would not have known about without the ACAS





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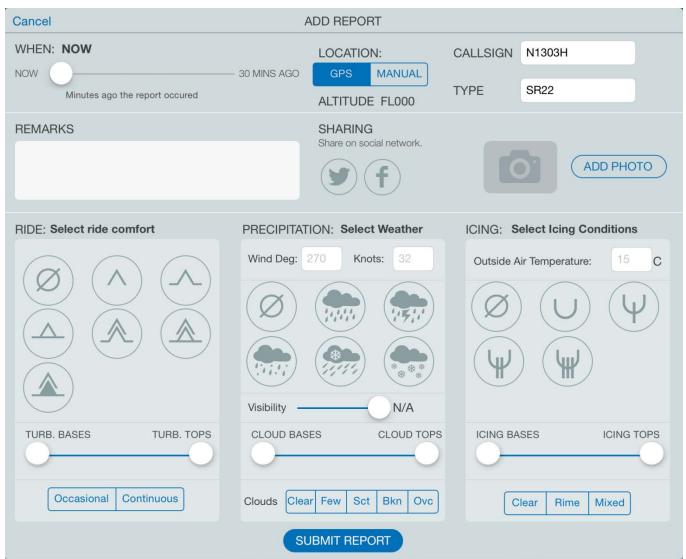
Inflight Electronic PIREP Submission A



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AerovieReports PIREP Submission U

Free App In Apple Store



Common UI Themes:

- Preconfigured aircraft type and tail number / call sign
- Auto-fill (with optional assist) for time, location
- Pilot is primarily concerned with characterizing conditions

Minimize heads-down time!



7/23 Test Flight - Cirrus Perspective / G1000 MFD via XM Sat feed.

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