KSBP 231656Z 00000KT 10SM CLR 14/10 A3027
RMK AO2 SLP249 T01390100

KBWI 231554Z 28009KT 10SM FEW250 07/M09 A3020
RMK AO2 SLP227 T00671089 $

KEWR 231551Z 30007G17KT 10SM FEW080 FEW200 06/M09 A3012
RMK AO2 SLP197 T00611089 $

CYYZ 231600Z 25008KT 15SM BKN034 OVC052 M01/M05 A3009
RMK SC7SC1 SLP199

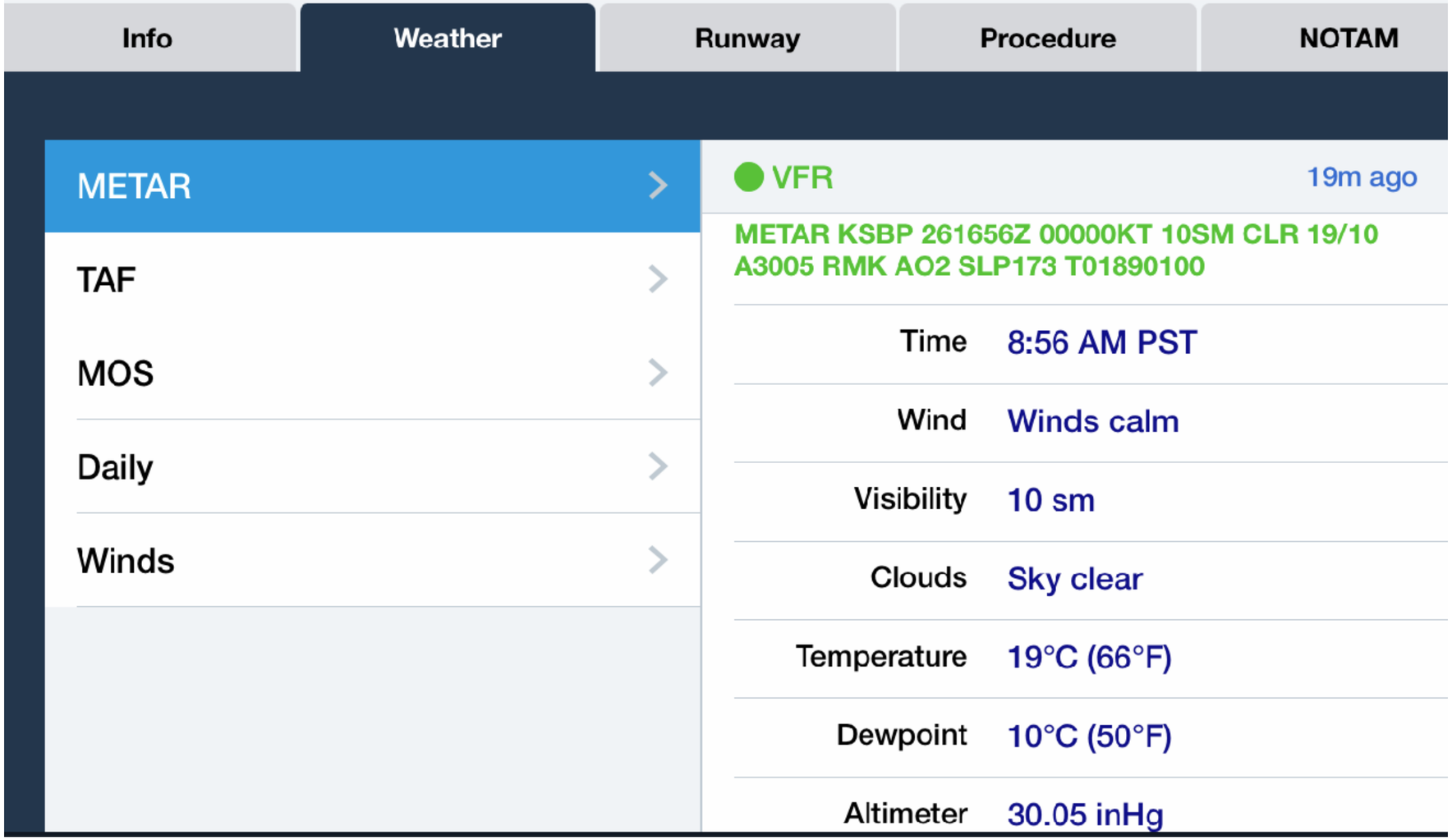
MMMX 231638Z 31010KT 7SM SKC 20/09 A3041 NOSIG
RMK HZY ISOL CU

https://aviationweather.gov/data/metar/

METAR for:	KSBP (San Luis Obispo/San Luis Cnty, CA, US)
Text:	KSBP 261256Z AUTO 11005KT 10SM CLR 09/04 A3000 RMK AO2 SLP156 T00940044
Conditions at:	1256 UTC 26 Wed Feb 2025
Temperature:	9.4°C (49°F)
Dewpoint:	4.4°C (40°F) (RH = 71%)
Pressure (altimeter):	30 inHg (1016 hPa) (sea level pressure 1015.6 hPa)
Winds:	from the ESE (110°) at 5 kt (2.6 m/s, 5.8 mph)
Visibility:	10+ mi (16+ km)
Clouds:	clear
TAF for:	San Luis Obispo/San Luis Cnty, CA, US
Text:	KSBP 261152Z 2612/2712 VRB03KT P6SM SKC
Forecast period:	1200 UTC 26 Wed Feb 2025 to 1900 UTC 26 Wed Feb 2025
Forecast type:	standard forecast or significant change
Winds:	variable at 3 kt (1.5 m/s, 3.5 mph)
Visibility:	6+ mi (10+ km)
Clouds:	clear

ForeFlight and ADSB

When you are flying you can get the METAR for your destination and airports along the way. You still need to get the ATIS.



METAR - Me • tar

Aviation Routine Weather Report

Current weather conditions.

Issued at around 5 minutes before the hour.

TAF - TAF (Like taffy)

Terminal Aerodrome Forecast

Valid for a 24 or 30-hour time period.

Updated four times a day at 0000Z, 0600Z, 1200Z, and 1800Z.

ATIS - A • tis

Automated Terminal Information Service

Only available at fields with a tower.

Weather, runways in use, taxiway closures…

Issued at around 5 minutes before the hour.

Why do we get the METAR and ATIS?

CFR § 91.103 Preflight action.

Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include—

(a) For a flight under IFR or a flight not in the vicinity of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATC;

CFR § 91.155 Basic VFR weather minimums.

(a) …no person may operate an aircraft under VFR when the flight visibility is less, or at a distance from clouds that is less, than that prescribed for the corresponding altitude and class of airspace in the following table:

AIM 5-1-1 Preflight Preparation

Prior to every flight, pilots should gather all information vital to the nature of the flight, assess whether the flight would be safe,

Getting METARs

You can get them with your EFB
like ForeFlight or Garmin Pilot or from this website.
https://aviationweather.gov/data/metar/?decoded=1&ids=KSBP&taf=1

Getting the ATIS

Call up and listen to the ATIS

KSBP	805-545-9638	120.6
KSMX	805-347-9136	121.15

One Minute Weather

KPRB	805-239-3593	120.125
L52	805-489-1305	118.375 (Oceano)

https://www.liveatc.net/search/?icao=ksbp

Decoding METARs

KSBP 252207Z 02009G19KT 10SM CLR 25/09 A3000
RMK AO2 WSHFT 2147 T02500094

METARs, TAFs, and ATIS start with the ICAO - International Civil Aviation Organization four letter code for the airport.

Sometimes you can guess the airport location

KLAX, KSFO, KOAK, KJFK, KBOS, KCLE, KSBA

Other times it make no sense unless you know the history of the airport

KORD, KMDY, KSQL, KMCI

Not all airports have an ICAO code, especially the smaller ones
L52 - Oceano, L88 - New Cuyama

There are some locations (mountain passes) have weather but no airport
Sexton Mountain Pass (SXT), Walton Peak (C07)

Decoding METARs

KSBP **252207Z** 02009G19KT 10SM CLR 25/09 A3000
RMK AO2 WSHFT 2147 T02500094

25 the day of the month
2207 the time of day
Z Zulu time

Time Zones

I used to fly from San Francisco to Newark all the time when I worked for AT&T.
Why did it take 8:24 to fly from KSFO to KEWR and only 3:45 to fly back?
Especially, since the Jet Stream and prevailing winds are from West to East?

SFO
SAN FRANCISCO, CA
departing from **GATE F11**
San Francisco Int'l - **SFO**
MONDAY 24-FEB-2025
12:00PM PST (on time)

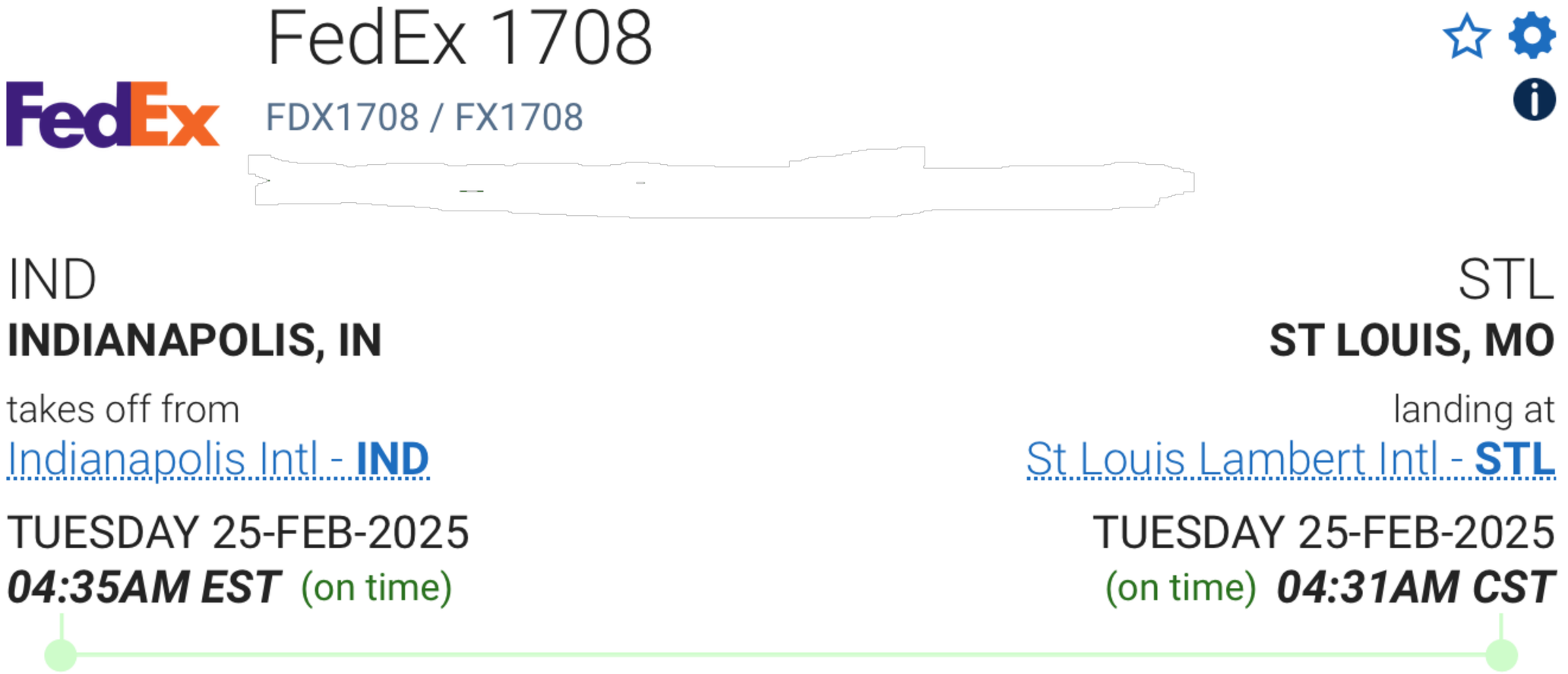
EWR
NEWARK, NJ
arriving at **TERMINAL C**
Newark Liberty Intl - **EWR**
MONDAY 24-FEB-2025
(on time) ***08:24PM EST***

EWR
NEWARK, NJ
departing from **GATE C95**
Newark Liberty Intl - **EWR**
MONDAY 24-FEB-2025
02:00PM EST (on time)

SFO
SAN FRANCISCO, CA
arriving at **TERMINAL 3**
San Francisco Int'l - **SFO**
MONDAY 24-FEB-2025
(on time) ***05:45PM PST***

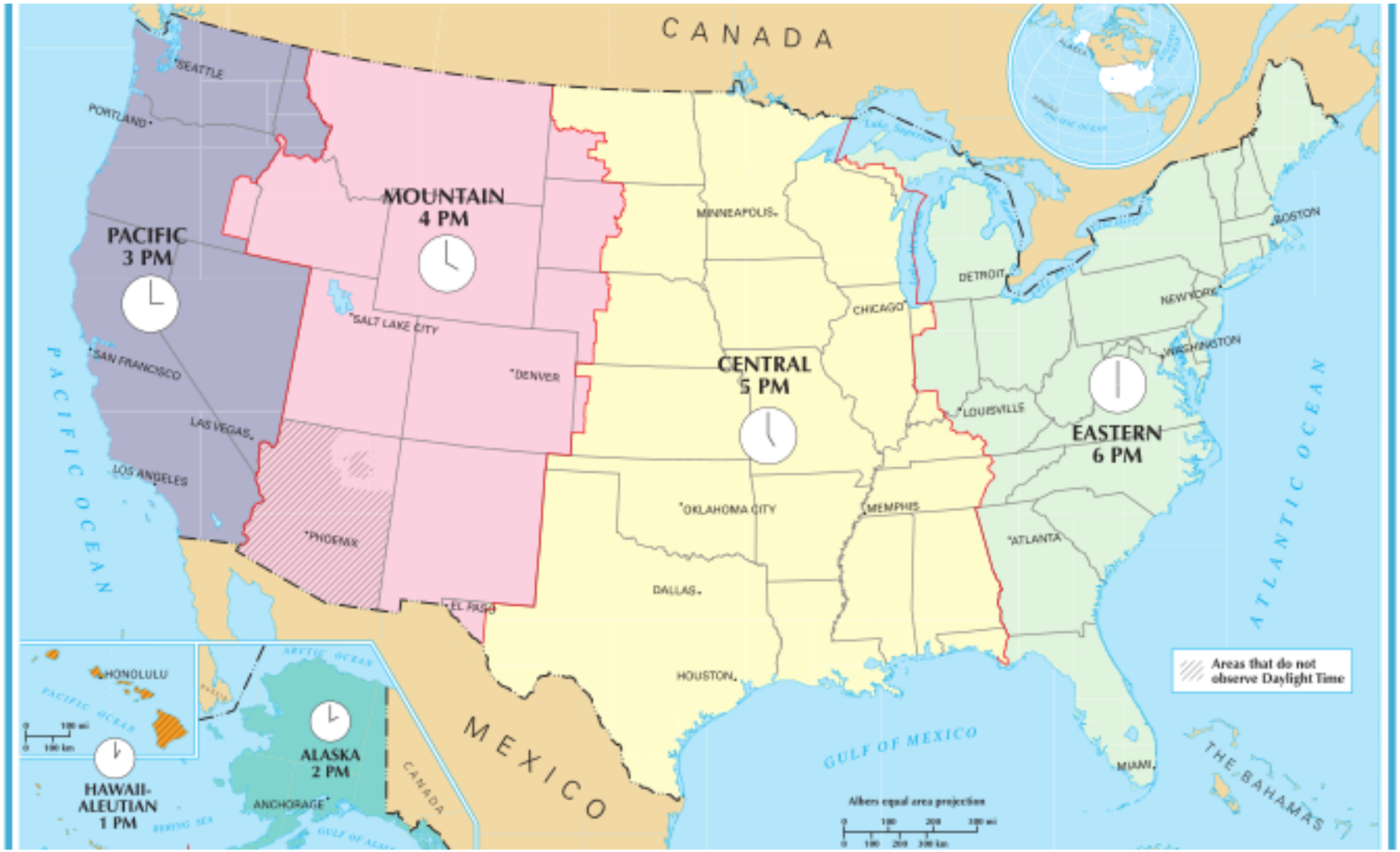
Time Zones

How can the FedEx plane land in Saint Louis before it took off from Indianapolis?



Time Zones

There are four time zones in the continental US. What time is it in Chicago? New York?



24 Hour Time — Military Time

We use a 24 hour clock to keep track of time.

So, 8:00 AM is 0800 hours with a 24 hour clock system.

11:15 AM is 1115 hours with a 24 hour clock system.

4:00 PM is 1600 hours with a 24 hour clock system.

What time is it now?

Greenwich Mean Time

Sailors could find out their latitude by seeing how high above the horizon the sun was at noon. You can tell your latitude by seeing which stars were overhead at a specific time of night. But that requires knowing what time it is. That problem was solved in the late 1700 by an Englishman named John Harrison with the development of a chronometer that could withstand a sea voyage. Before starting the voyage the timepiece was set to the time at the Greenwich Observatory.

Zulu Time

Rather than trying to keep track of which time zone you are in we use UTC - Coordinated Universal Time, referred to Zulu time in aviation.

We are UTC -8 (-7DST)

So right now it is around 4:30 PM. That's 1630 with a 24 hour clock. Add 8 and it 2430Z.
So that's 30 minutes past midnight Zulu time or 0030Z. From earlier today,

KSBP 242156Z 31018KT 10SM CLR 19/12 A3012
It was taken on the 24th of the month at 2156Z. Subtract 8 and to get 1356 local time which is 1:56 PM.
It can get tricky when it rolls over to the next day.

KSBP 240156Z 32009KT 10SM CLR 20/10 A3017
We have to subtract 8 from 0156, so we subtract 1 first and then 7 to get 1756Z.
Subtract 12 o get 5:56 PM or just before 6 PM local time on the **23rd**.

Why do we use Zulu Time?

Let’s look at our FedEx flight from earlier.

Indianapolis is in the Eastern Time Zone which is are UTC -5 (-4DST) so we ADD 5 hours to get UTC.

The last METAR before we take off is going to be at

KIND **250854Z** 20007KT 10SM CLR 04/02 A2976 RMK AO2 SLP080 T00390017

It’s an hour flight and we don’t need to worry about the time zone that St Louis is in,
we just need to find the current METAR and the TAF for around 1 hour from 0935Z.

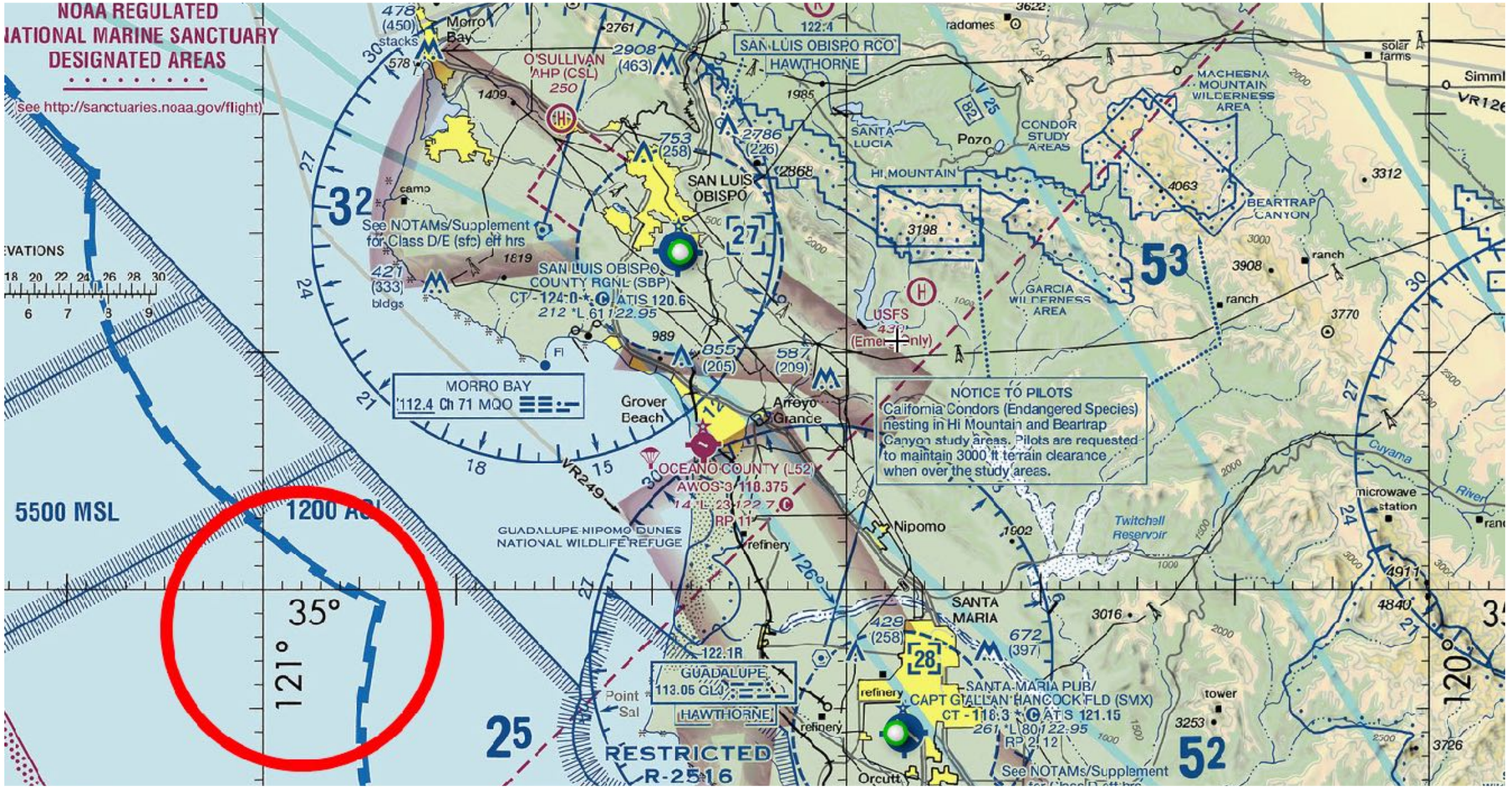
KSTL **250851Z** 25005KT 10SM CLR 08/02 A2982 RMK AO2 SLP095 T00780017 $

TUESDAY 25-FEB-2025
04:35AM EST (on time)

TUESDAY 25-FEB-2025
(on time) ***04:31AM CST***

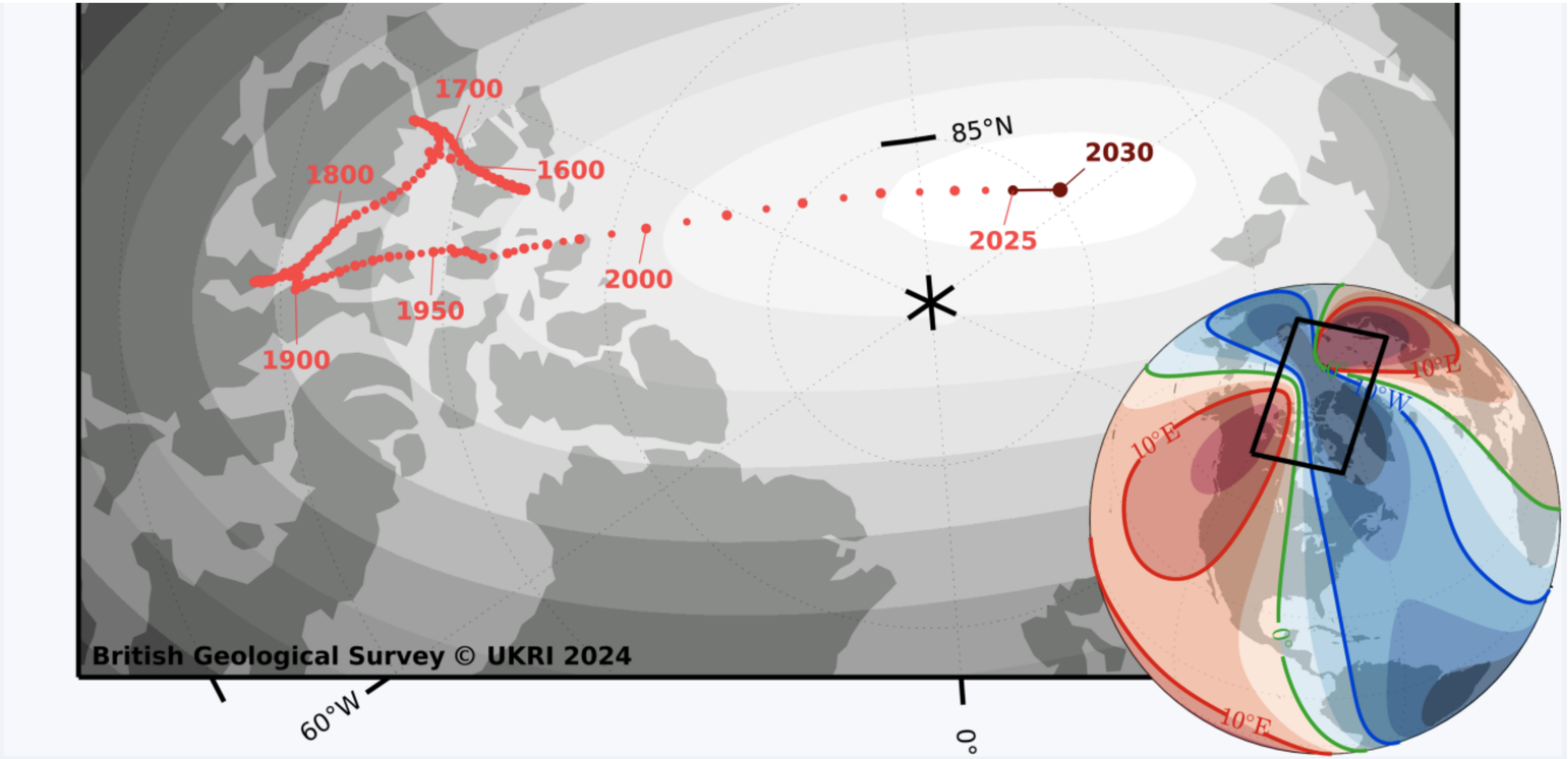
True North

The points the earth rotates around its axis are the North and South Poles.
They are defined as 0° North latitude and 0° South latitude.
All longitudes go through the poles. KSBP is at N35°14.24´ W120°38.56´



Magnetic North

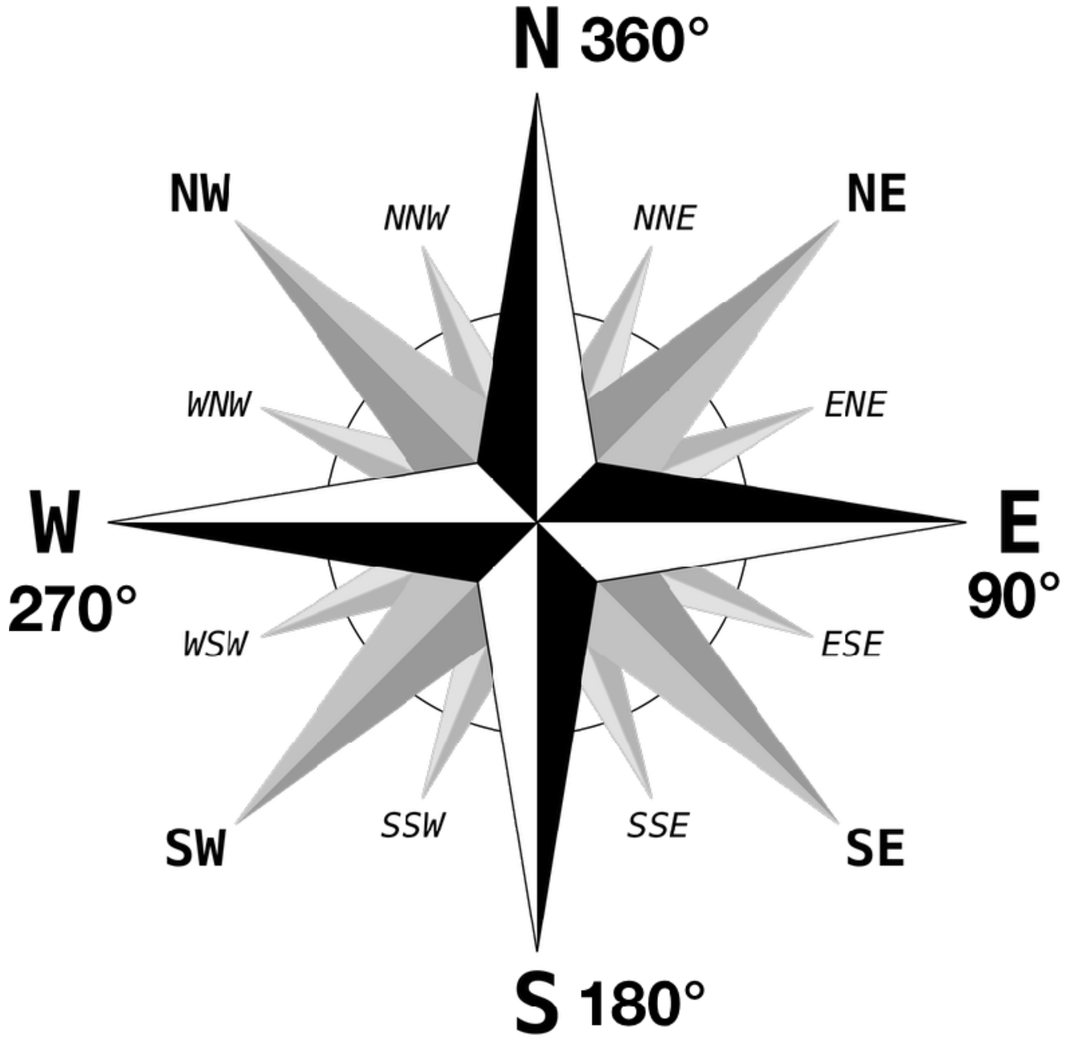
Magnetic North is where the compass points. It has been moving rather quickly towards Siberia.



Magnetic north pole locations from 1590 to 2030. BGS © UKRI and © Wessel,

Magnetic North

The Cardinal Directions are North, South, East, and West.



Airplane Six Pack

Before GPS we would fly using a Heading Indicator set to our magnetic compass.

True North and Magnetic North

Wind direction is given in degrees True North rounded to the nearest 10 degrees.

KSBP 252207Z **02009G19KT** 10SM CLR 25/09 A3000
RMK AO2 WSHFT 2147 T02500094
This METAR shows the wind at 020° at 9 Kts gusting to 19 Kts

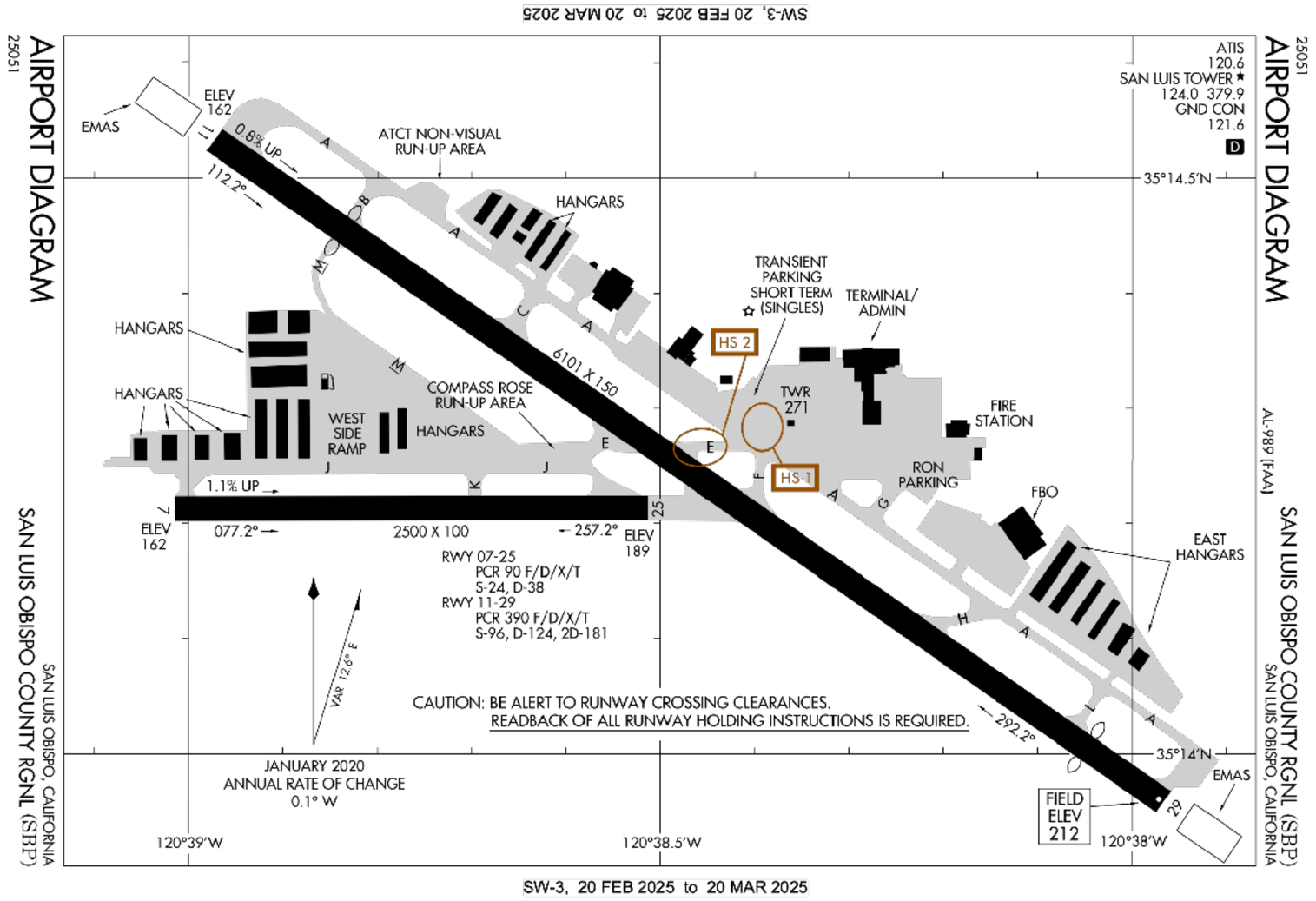
KSBP 252356Z **35011KT** 10SM CLR 24/10 A2998 RMK AO2 SLP152
T02440100 10256 20194 56013
This METAR shows the wind at 350° at 11 Kts

When we listen to the ATIS it will give us the wind direction relative to Magnetic North so it will be about 10° less than the METAR.

Runway Numbering and Taxiway Designation

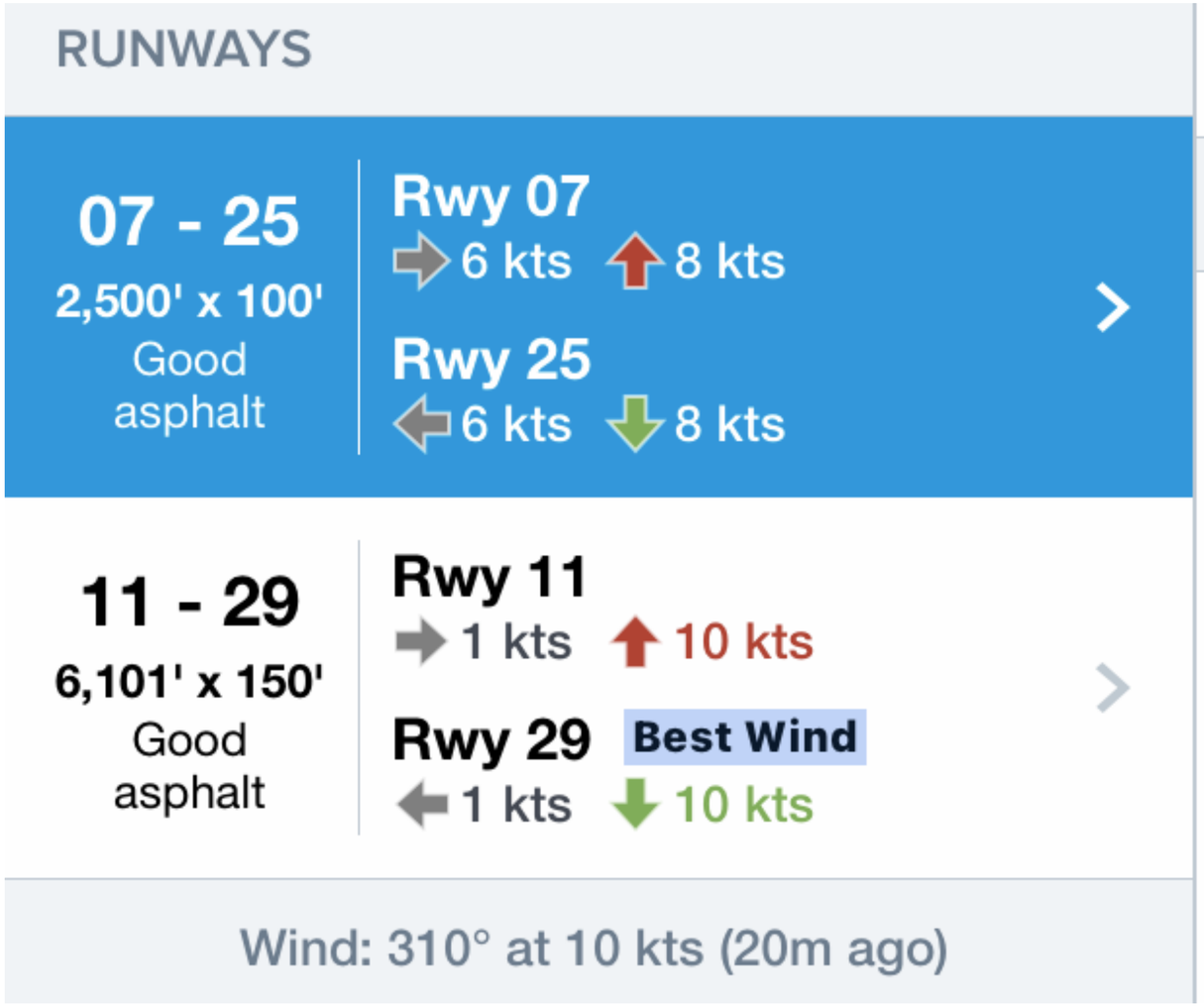
Runways are numbered by magnetic direction rounded to nearest 10.

KSBP has runways 11/29 and 7/25



Wind Direction

We care about wind direction for two reasons.
It lets us know which runway to use—we want a headwind.

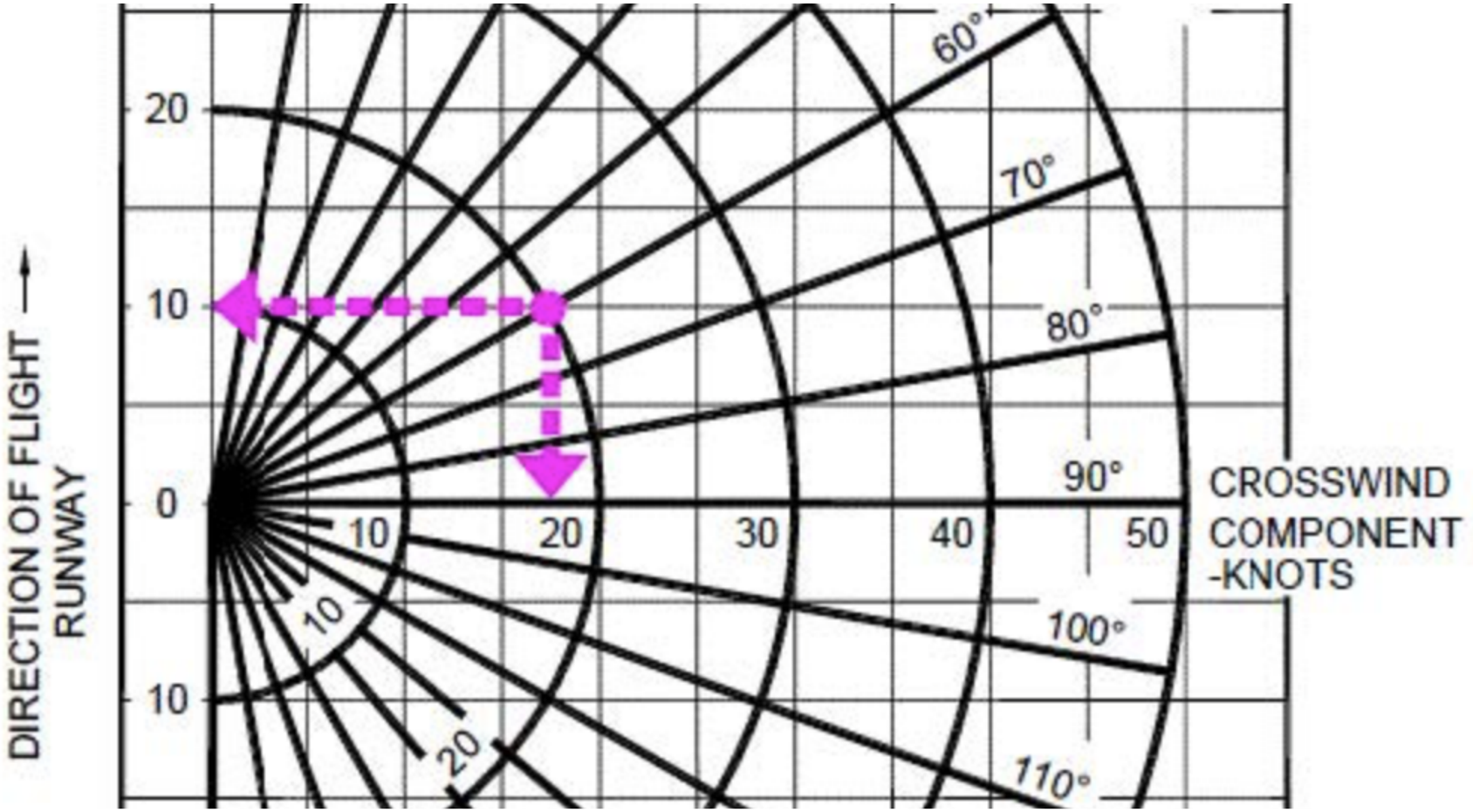


Wind Direction

We can use the Heading Indicator to figure out the wind direction relative to the runway.

Wind Direction

And it allows us to calculate the crosswind component to see if our airplane can safely land or take off.
Most light aircraft have a maximum of 17 kts crosswind.



Visibility and Sky Condition

Visibility is shown in statute miles. For comparison our runway is 6,100´ long or 1.2 SM. So if the visibility is less than that, you can't even see the end of the runway.

KNEN 242035Z AUTO 06006KT 1 3/4SM -RA BR OVC004 13/13 A3001 RMK AO2 P0006 T01280128 TSNO $

KMWN 241948Z 24027G41KT 1/4SM FZFG BKN000 BKN100 OVC150 M07/M09 RMK FZFG BKN000 FZFG INTMT INTMT PRFG

KGNV 242028Z 05008KT 4SM -RA BR OVC005 14/13 A3000 RMK AO2 RAB06 CIG 003V008 P0001 T01440133 $

KSBP 241741Z 2418/2518 29008KT P6SM SCT200

KBOS 241954Z 19011KT 10SM FEW055 BKN180 OVC250 06/M04 A3000 RMK AO2 WSHFT 1934 SLP159 T00611039

Sky Condition

You can get decoded METARs and the ATIS doesn't use abbreviations so you don't have to worry about all the abbreviations for weather but you should know what they mean. If it is OVC—overcast or BKN—broken it's not likely I'll be flying unless the overcast or broken layer is high. Note that altitudes for cloud cover are given in hundreds of feet above the surface.

Sky Cover	Contraction
Less than ⅛ (Clear)	SKC, CLR, FEW
⅛–⅔ (Few)	FEW
⅜–⅝ (Scattered)	SCT
⅝–⅞ (Broken)	BKN
⅞ or (Overcast)	OVC

Temperature and Dewpoint

Temperature and Dewpoint are reported in degrees Celsius (Centigrade).

The formula for converting from Celsius to Fahrenheit is
F = 9/5 C + 32.

So if the temperature is 0° C, then 9/5 * 0 + 32 = 32° F.
If the temperature is 40° C, then 9/5 * 40 + 32 = 104° F.

°C	°F	
-40	-40	°C & °F are equal
-18	0	Extremely Cold
-10	14	Darn Cold
0	32	Freezing
10	50	Crisp
15	59	Standard temperature
20	68	Chilly
25	77	Just right
30	86	Start thinking about density altitude
40	104	Darn hot
50	122	Death Valley hot

Temperature and Dewpoint

When temperature and dewpoint meet, you get fog.

KSBP 241503Z 00000KT 10SM OVC002 10/10 A3019

Temperature and Dewpoint

When temperature and dewpoint meet below freezing you get freezing fog.

METAR for:	KMWN (Mount Washington(OBS), NH, US)
Text:	KMWN 241948Z 24027G41KT 1/4SM FZFG BKN000 BKN100 OVC150 M07/M09 R
Conditions at:	1948 UTC 24 Mon Feb 2025
Temperature:	-7°C (19°F)
Dewpoint:	-9°C (16°F) (RH = 86%)
Winds:	from the WSW (240°) at 27 kt (13.9 m/s, 31.1 mph) gusting to 41 (21.1 m/s, 47.2 mph)
Visibility:	¼ mi (0.4 km)
Clouds:	broken clouds at 0 ft, broken clouds at 10,000 ft, overcast at 15,000 ft
Ceiling:	0 ft
Weather:	freezing fog

Altimeter Setting

An altimeter is a special kind of barometer that we can adjust to show the pressure at sea level with standard temperature and pressure. 15°C and 29.92″ of mercury. When the altimeter is set to the value in the ATIS it should read very close to the field elevation when you are at the end of the runway.

Phonetic Alphabet

We use the Phonetic Alphabet to refer to tail numbers, taxiways and for the current ATIS.

A	● –	Alfa	(AL-FAH)
B	– ● ● ●	Bravo	(BRAH-VOH)
C	– ● – ●	Charlie	(CHAR-LEE) or (SHAR-LEE)
D	– ● ●	Delta	(DELL-TAH)
E	●	Echo	(ECK-OH)
F	● ● – ●	Foxtrot	(FOKS-TROT)
G	– – ●	Golf	(GOLF)
H	● ● ● ●	Hotel	(HOH-TEL)
I	● ●	India	(IN-DEE-AH)
J	● – – –	Juliett	(JEW-LEE-ETT)
K	– ● –	Kilo	(KEY-LOH)
L	● – ● ●	Lima	(LEE-MAH)
M	– –	Mike	(MIKE)
N	– ●	November	(NO-VEM-BER)
O	– – –	Oscar	(OSS-CAH)
P	● – – ●	Papa	(PAH-PAH)
Q	– – ● –	Quebec	(KEH-BECK)
R	● – ●	Romeo	(ROW-ME-OH)
S	● ● ●	Sierra	(SEE-AIR-RAH)
T	–	Tango	(TANG-GO)
U	● ● –	Uniform	(YOU-NEE-FORM) or (OO-NEE-FORM)
V	● ● ● –	Victor	(VIK-TAH)
W	● – –	Whiskey	(WISS-KEY)
X	– ● ● –	Xray	(ECKS-RAY)
Y	– ● – –	Yankee	(YANG-KEY)
Z	– – ● ●	Zulu	(ZOO-LOO)
1	● – – – –	One	(WUN)
2	● ● – – –	Two	(TOO)
3	● ● ● – –	Three	(TREE)
4	● ● ● ● –	Four	(FOW-ER)
5	● ● ● ● ●	Five	(FIFE)
6	– ● ● ● ●	Six	(SIX)
7	– – ● ● ●	Seven	(SEV-EN)
8	– – – ● ●	Eight	(AIT)
9	– – – – ●	Nine	(NIN-ER)
0	– – – – –	Zero	(ZEE-RO)

Listening to the ATIS

They talk really fast sometimes so it’s best if you write it down and sometimes you need to listen more than once. The format is exactly like we’ve been covering for METARs and at the end they’ll give the information on which runway is in use and anything else, like taxiway closures, that you need to know before taxiing or landing.

Wind Direction is given relative to Magnetic North because that’s how the runways are aligned.

At the beginning and the end they’ll tell you the Phonetic Alphabet name of the current ATIS.

The Radio Call

Finally, after all this, we're ready to call the tower. You need to say who you are calling, tell them who you are, where you are, and what you want.

e.g. San Luis Ground, Cherokee 1997H (Wun, Niner, Niner, Seven, Hotel) , at West Side Hangars, Taxi via J (Juliet) to Runway 25, with Information India.

If you happen to call when they are recording the ATIS, say "Negative ATIS".

They will come back with a taxi clearance. For me it's usually

Cherokee 1997H, taxi via Juliet, hold short of Runway 25.

The Radio Call

If the winds don’t favor Runway 25 or if I’m heavy I’ll request runway 29. If I’ve just refueled and want to take off on Runway 29 I’ll say:

San Luis Ground, Cherokee 1997H, at West Side Fuel with Information India.

Cherokee 1997H, taxi via Mike, Juliet, Echo, hold short of Runway 29.

Often they’ll ask you to hold short on the compass rose instead of before the runway so that other planes can exit.

ForeFlight and ADSB

When you are flying you can get the METAR for your destination and airports along the way. You still need to get the ATIS.