METARs

This looks like a lot of information to decode, but it's really not that hard.

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

EGLL 231650Z AUTO 20016G27KT 180V240 9999 -RA BKN018 OVC027
11/08 Q1017 TEMPO RA BKN014

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

Why do we get the METAR and ATIS?
It's a rule, actually lots of rules.

For a pilot who flies for fun on the Central Coast there are only three kinds of weather:
I wonder when the fog will burn off,
it's a great day for flying, and
very rarely, no way I'm going up today.

But we still need to check the weather to see if it's legal to fly and if it's going to be a good day for flying.

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:

(c) Except as provided in § 91.157, no person may operate an aircraft beneath the ceiling under VFR within the lateral boundaries of controlled airspace designated to the surface for an airport when the **ceiling is less than 1,000 feet.**
(d) (1) Unless ground **visibility** at that airport **is at least 3 statute miles**; or

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,

Definitions

Aviation Routine Weather Report (METAR) - Me • tar
Current weather conditions.

Terminal Aerodrome Forecast (TAF) - TAF (Like taffy)
Each TAF is valid for a 24 or 30-hour time period and is updated four times a day at 0000Z, 0600Z, 1200Z, and 1800Z.

Automated Terminal Information Service (ATIS) - A • tis
The Automated Terminal Information Service (ATIS) is a recording of the local weather conditions and other pertinent non-control information broadcast on a local frequency in a looped format. It is normally **updated once per hour [around 5 minutes before the hour]** but is updated more often when changing local conditions warrant. Important information is broadcast on ATIS including weather, runways in use, specific ATC procedures, and any airport construction activity that could affect taxi planning.

When the ATIS is recorded, it is given a code. This code is changed with every ATIS update. For example, ATIS Alpha is replaced by ATIS Bravo. The next hour, ATIS Charlie is recorded, followed by ATIS Delta and progresses down the alphabet.

Source: Pilot's Handbook of Aeronautical Knowledge p. 14-5

The ATIS is only available when the tower is in operation. At other times, the frequency is the same but there will be a computer generated voice with the weather and information like the frequency to connect for IFR flights.

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

Getting the ATIS
You can call up and listen to the ATIS or listen on LiveATC

KSBP	805-545-9638	120.6	San Luis Obispo
KSMX	805-347-9136	121.15	Santa Maria

Some airports have lots more information than just the weather
KLAX ASOS 310-568-1486 133.8 Arrival, 135.65 Departure

One Minute Weather - ASOS or AWOS

KPRB	805-239-3593	120.125	Paso Robles
L52	805-489-1305	118.375	Oceano

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

Airport Codes

METARs, TAFs, and ATIS start with the ICAO - International Civil Aviation Organization - four letter code for the airport. For airports that do not have a code, you can still look up airports by putting a K before the FAA airport code. e.g. Reedly Municipal (O32) by Fresno, CA and Grants Pass 3S8 in Oregon.

https://aviationweather.gov/data/metar/?decoded=1&ids=K3S8&taf=1

There are some locations with a METAR that do not have an airport, e.g. Sexton Mountain Pass (SXT).

Airport names. Sometimes make sense, KBOS, KBWI, KATL but other times why? Usually because they were named after something or someone in the past like Chicago's KORD which was at one time named Orchard Field but is now called after Edward "Butch" O'Hare, the U.S. Navy's first flying ace of WWII but kept its code.

Likewise, Midway Airport is not named because it is midway between the East and West Coasts but after the battle of Midway. And KSNA, John Wayne Airport in Orange County, makes no sense until you realize that it was renamed for John. Wayne in 1979, and the original code SNA for the city of Santa Ana was not changed. New Orleans International Airport makes even less sense since is is called Louis Armstrong and the code is KSMY for Moisant Stock Yards. Named after a pioneering aviator who, in 1910, crashed and died on the field that later became the airport.

KSQL is San Carlos in the heart of Silicon Valley where the database language, SQL was developed but the airport code was assigned before that. KMCI is Kansas City I always thought it was named after the phone company MCI but it is Mid Continent International.

You can usually find the code for any airport with a search but in case you want to browse them, Wikipedia has a page for every ICAO code, including K.

https://en.wikipedia.org/wiki/List_of_airports_by_ICAO_code:_K

Time Zones and Zulu Time

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***

And has FedEx invented time travel?

FedEx 1708

FDX1708 / FX1708

IND **INDIANAPOLIS, IN** takes off from Indianapolis Intl - **IND** TUESDAY 25-FEB-2025 ***04:35AM EST*** (on time)	STL **ST LOUIS, MO** landing at St Louis Lambert Intl - **STL** TUESDAY 25-FEB-2025 (on time) ***04:31AM CST***

Nope. The answer is Time Zones.

Time Zones and Zulu Time

There are four time zones in the continental US.
We're in the Pacific zone. If it's 4:00 PM here, it's 7:00 PM in New York.

Rather than trying to keep track of which time zone you are in and when the forecast applies, we use UTC - Coordinated Universal Time, referred to Zulu time in aviation. We also use a 24 hour clock.We are in the Pacific Time Zone which is UTC -8 (-7DT).

As I'm typing this 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,

So, 8:00 AM is 0800 hours with a 24 hour clock system. Zero eight hundred hours.
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 where you are?

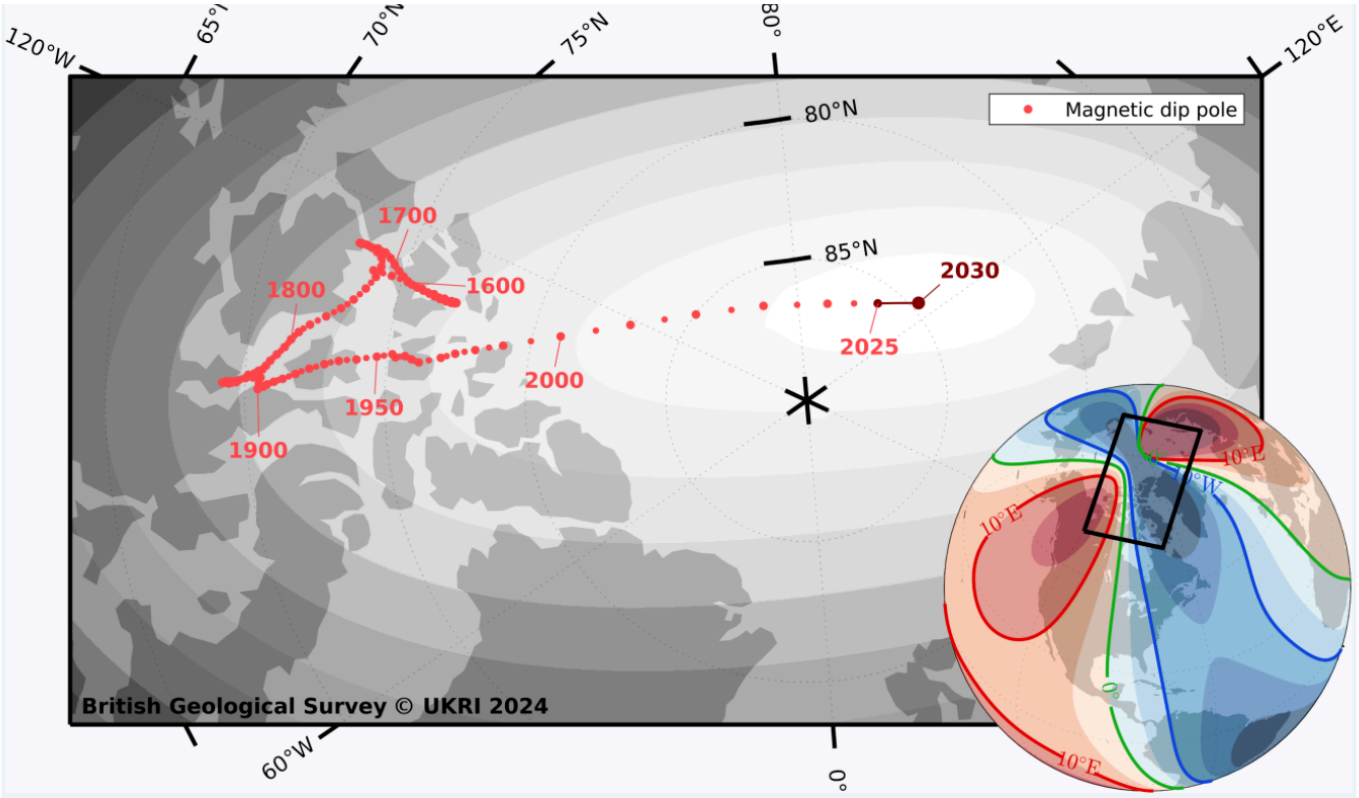
KSBP 242156Z 31018KT 10SM CLR 19/12 A3012

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. If we subtract 8 from 01 we get -07 and that's a bit confusing for me so I subtract 1 first to get 0056 (or 2456) and then 7 to get 1756Z. Subtract 12 o get 5:56 PM or just before 6 PM local time on the **23rd**.

Magnetic and True North



Magnetic north pole locations from 1590 to 2030. BGS © UKRI and © Wessel, P., and W. H. F. Smith (1996), A global, self-consistent, hierarchical, high-resolution shoreline database, J. Geophys. Res., 101(B4), 8741–8743, doi:10.1029/96JB00104. (v2.3.6).

Maps and charts are made with reference to the North Pole being at 0° latitude and prime meridian 0° running through it and through Greenwich, England. It is also known as the Geographic North Pole or Terrestrial North Pole. A compass uses a magnet to point to the Magnetic North Pole which is not located in the same position and in fact is moving rather quickly towards Siberia.

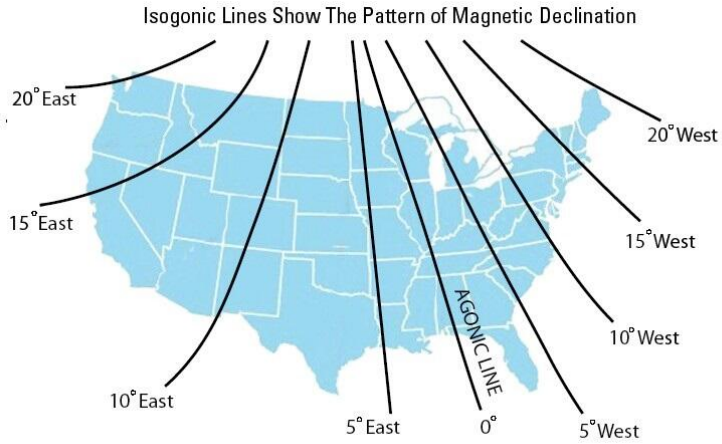
METARs and TAFs use True North when reporting wind direction so we need to make adjustments to account for the difference between True and Magnetic North. The correction that is required can be found by looking at the isogonic lines on our charts. For those of us on the central coast we need to subtract 13.5° from the wind direction on METARs and TAFs. If you are in Columbia, MO or Pine Bluff, AR you don't need to make any adjustment. Flying into or out of New York City or Newark, NJ you would need to add 13° to True North to get Magnetic North. BWI is on the 11°W isogonic line so you would add 11°.

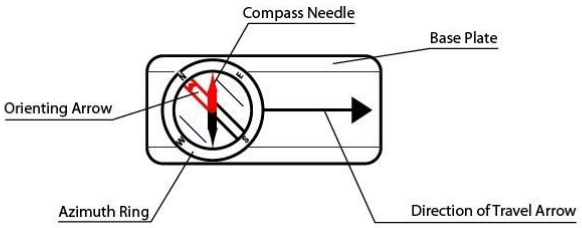
METARs are used by more than pilots so referencing True North makes the most sense. But as described below, runways are numbered based on Magnetic North so the ATIS and AWOS report the wind direction as magnetic.

As a general rule, if you read, it is True, if you hear it is Magnetic

Isogonic Lines

This is a bit esoteric so you can skip this page if you want. A compass points to magnetic north and the difference between where the compass points and true north varies across the world. This map shows the difference in the US. We subtract the declination from true north if it is east and add it to true north if it is west. Aeronautical charts show the these isogonic lines as a dashed magenta line with the declination printed along them They are often hard to find unless over water or in unpopulated areas. You can read more about them at the USGS website.

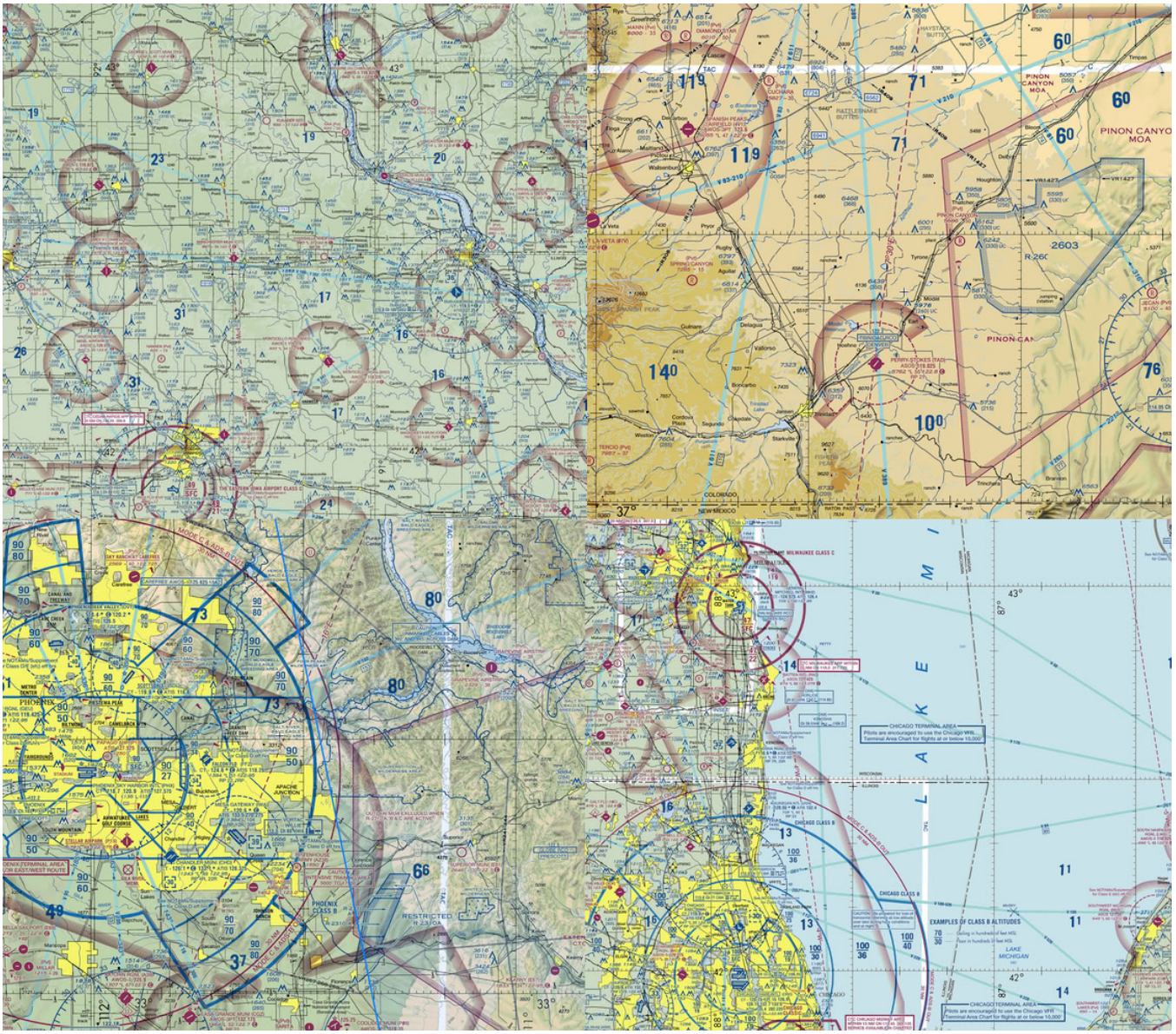




Preflight: METARs, TAFs, and ATIS

Isogonic Lines

See if you can find the isogonic lines in these four chart excerpts. You'll probably have to zoom in to read the numbers. Determine the declination and whether to add of subtract from true north to get magnetic north.



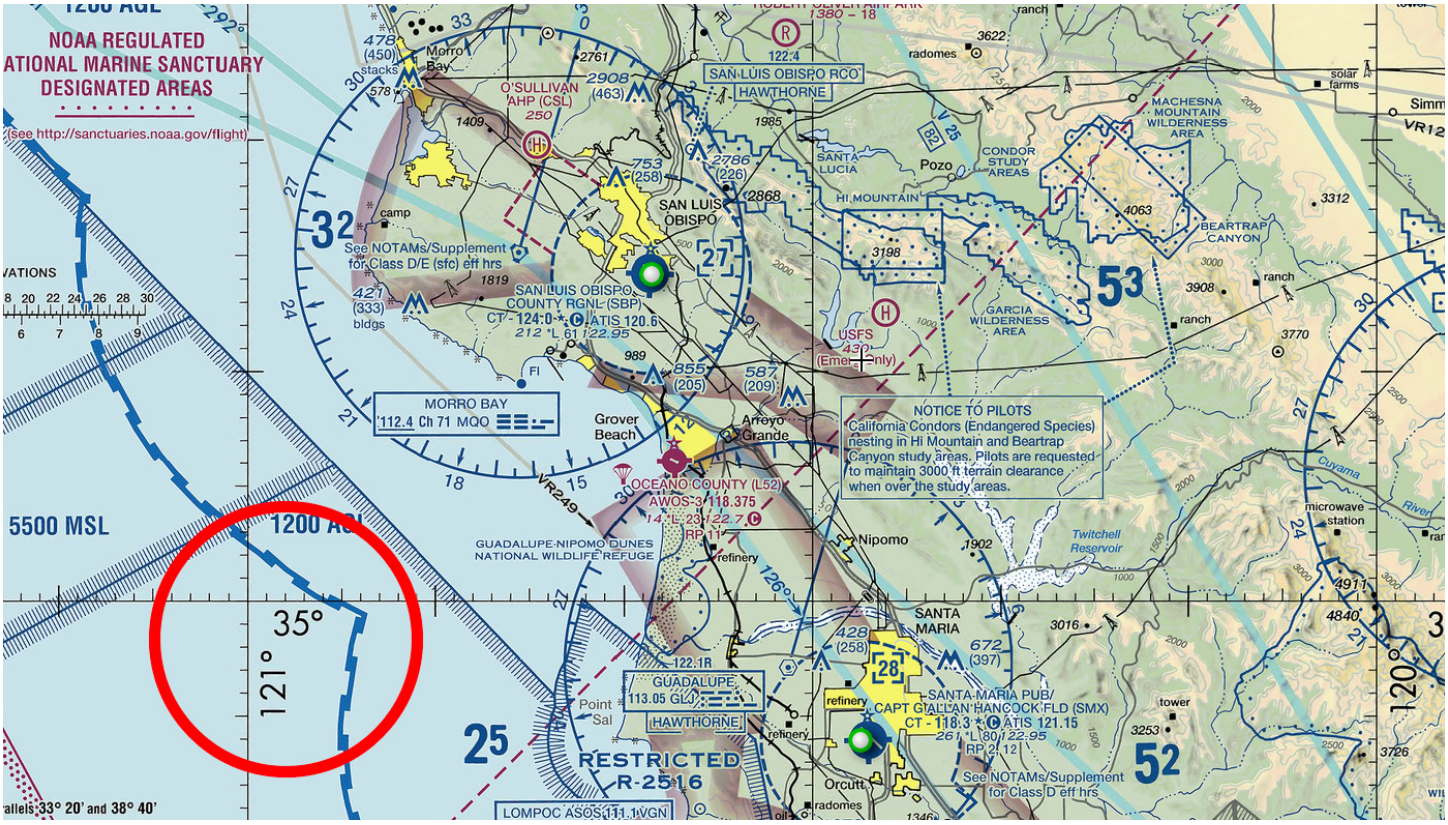
True North

The points that the earth rotates around on 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.
The FAA Chart Supplement shows the coordinates for all airports.
KSBP is at N35°14.24´ W120°38.56´

One way to remember which is which is that latitude is like the rungs of ladder going up from the equator to the North Pole. Longitude are long lines circling the globe and are the same long length everywhere.

You can use latitude and longitude to define points in your GPS. For example, I know that there is a valley that I want to fly up when I go to New Cuyama. I created a waypoint in my GPS with the coordinates 35.05°N 119.9°W.

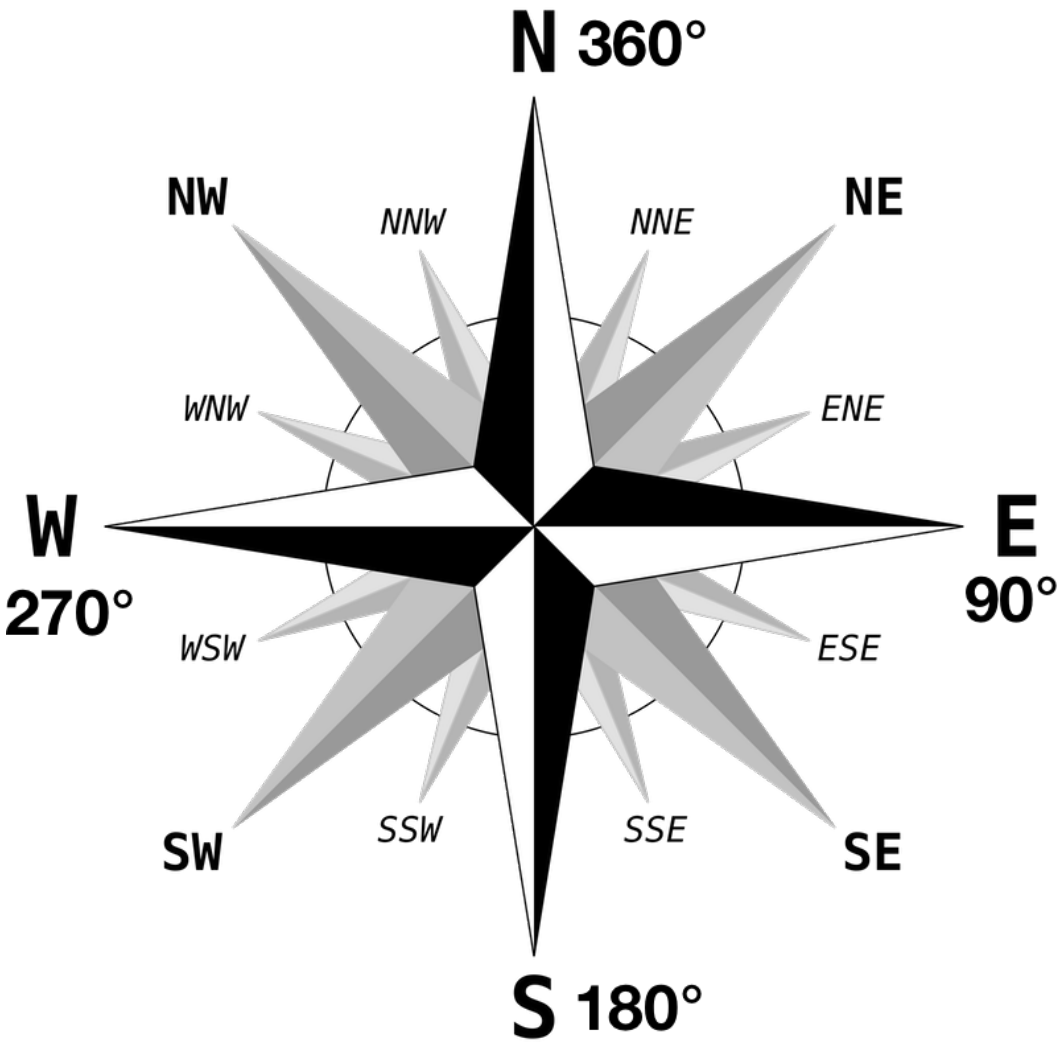
My GPS and ForeFlight and the USGS show N and W after the numbers. For some reason the FAA Chart Supplement has them before. In both cases they are written as degrees (°), minutes (´) and if required, seconds (´´).



Preflight: METARs, TAFs, and ATIS

Cardinal Directions

The Cardinal Directions are North, South, East, and West and most weather reports and forecasts use compass points instead of degrees when reporting the wind direction. At our airport the wind is usually out of the NW which would be about 315° but it varies when we get storms or Santa Ana winds.



Date/Time (L)	Temp. (°F)	Dew Point (°F)	Relative Humidity (%)	Heat Index (°F)	Wind Direction	Wind Speed (mph)	Visibility (miles)	Clouds (x100 ft)	Sea Level Pressure (mb)	Station Pressure (in Hg)	Altimeter Setting (in Hg)
Feb 25, 9:35 pm	57	46	67		WSW	3	10.00	CLR		29.81	30.03
Feb 25, 9:30 pm	55	46	72		S	5	10.00	CLR		29.81	30.03
Feb 25, 9:25 pm	57	46	67		S	5	10.00	CLR		29.81	30.03
Feb 25, 9:20 pm	55	48	77		WSW	3	10.00	CLR		29.80	30.02
Feb 25, 9:15 pm	55	48	77		SSW	3	10.00	CLR		29.80	30.02
Feb 25, 9:10 pm	55	48	77		WSW	3	10.00	CLR		29.80	30.02
Feb 25, 9:05 pm	57	48	72		SW	5	10.00	CLR		29.80	30.02
Feb 24, 3:25 pm	63	54	72		NW	22	10.00	CLR		29.91	30.13
Feb 24, 3:20 pm	64	55	73		NW	20G26	10.00	CLR		29.91	30.13
Feb 24, 3:15 pm	63	54	72		NW	22	10.00	CLR		29.91	30.13
Feb 24, 3:10 pm	63	54	72		NW	23G29	10.00	CLR		29.91	30.13
Feb 24, 3:05 pm	64	54	68		NW	23G30	10.00	CLR		29.92	30.14
Feb 24, 3:00 pm	64	54	68		NW	22G29	10.00	CLR		29.92	30.14
Feb 24, 2:55 pm	64	54	68		NW	25G31	10.00	CLR		29.92	30.14

Preflight: METARs, TAFs, and ATIS

Wind Direction is True North

Wind direction is given in degrees True North rounded to the nearest 10 degrees. The ATIS/AWOS/ASOS is reported as Magnetic North so we need to make a correction if we are reading the METAR.

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.

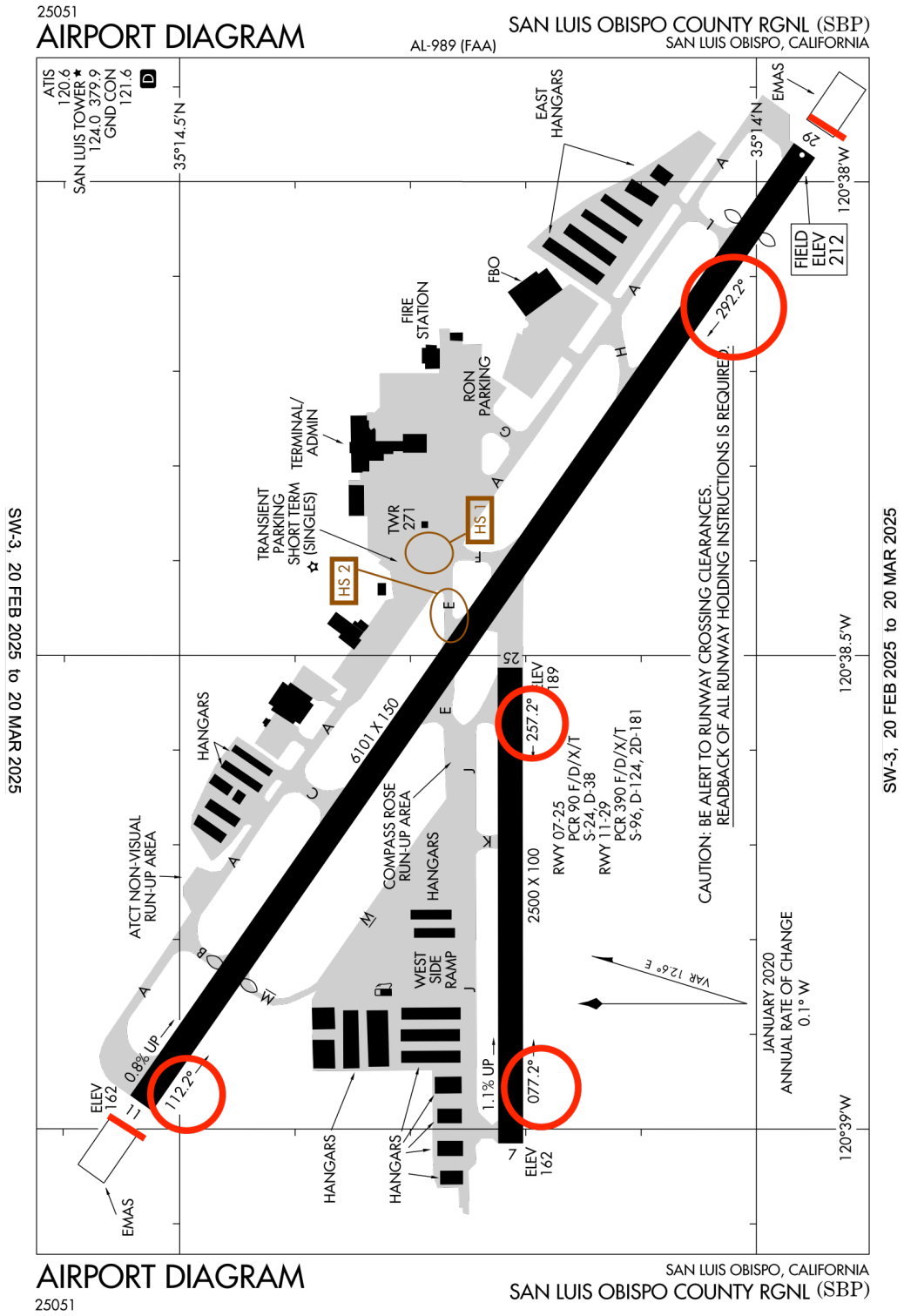
KCLE 271310Z **28013KT** 2SM -DZ BR OVC004 03/02 A2969
RMK AO2 RAE1257DZB1257 P0000 T00280022

This METAR shows the wind at 280° at 13 Kts
When we listen to the ATIS it will give us the wind direction relative to Magnetic North.
In Cleveland we are on the 8°W isogonic line so it will be about 10° more than the METAR.

Runway Numbering and Taxiway Designation

We need to make a short digression and explain how runways are numbered. Historically pilots used their compass and a map to get from one airport to another. Runways were numbered by magnetic direction rounded to nearest 10 so that when a pilot is looking for the airport, they can line up with a magnetic course that takes them to the runway.

KSBP has runways 11/29 and 7/25. I you look at the chart, you can see that the actual magnetic direction of each runway.



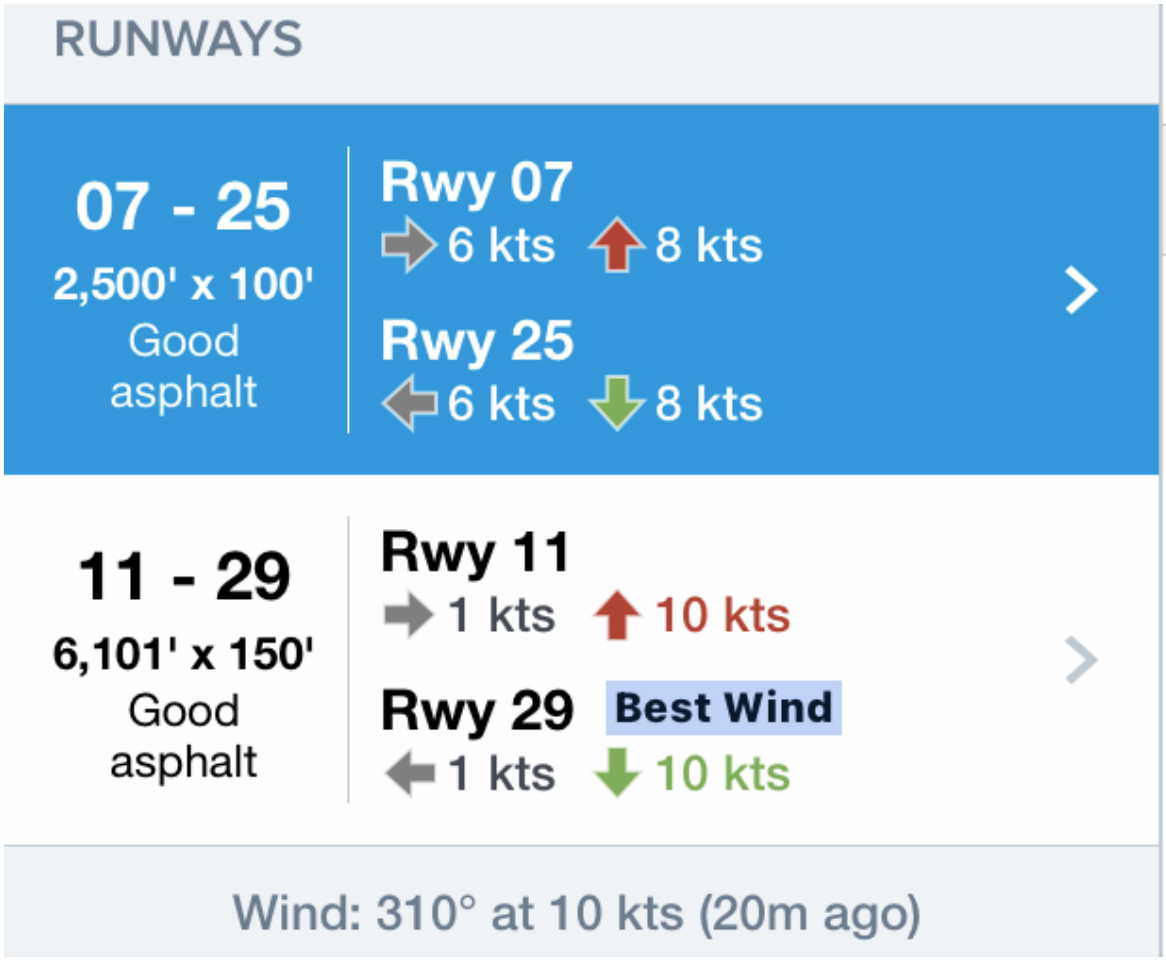
Preflight: METARs, TAFs, and ATIS

Wind Direction Relative to the Runway

We can use the Heading Indicator to figure out the wind direction. If the runway is 29 (red) and the wind is 310 then the wind is coming from the right at a 20° angle to the runway. If the wind is 240° then the wind is coming from the left at 50°. If the wind is coming from 180° it would be 110° from Rwy 29 and so would be a tailwind. In that case you would use Rwy 11 and the wind would be from your right at a 70° angle.

Wind Direction—Runway In Use

We care about wind direction for two reasons.
It lets us know which runway to use—we want a headwind. In this case Rwy 25 or Rwy 29 have a headwind and Rwy 29 has a smaller crosswind component, although 6 kts is well within the capability of small aircraft and the skills of even student pilots.



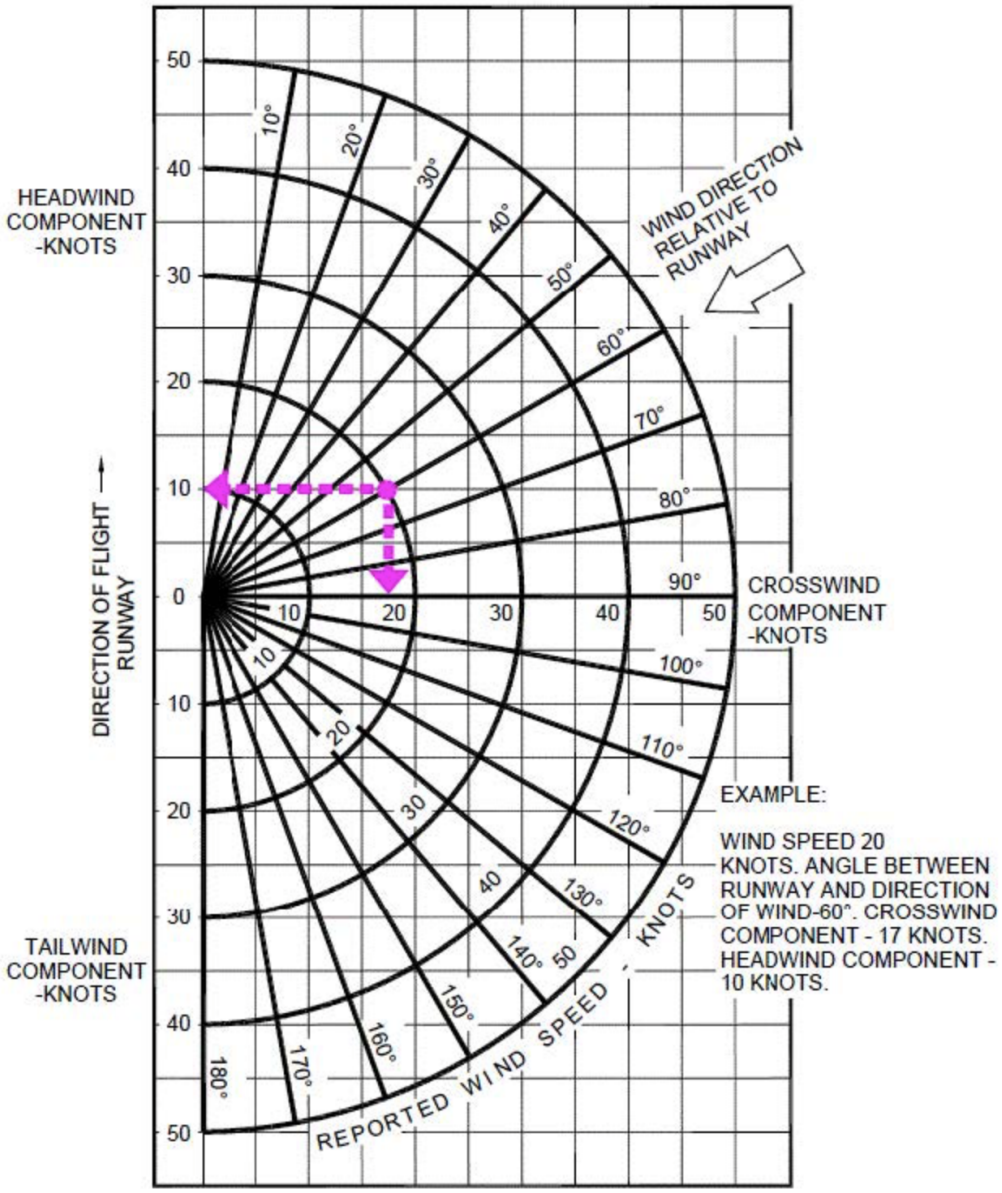
Wind Direction—Crosswind Component

The second reason we care about wind direction for two reasons is that it let's us anticipate how much crosswind correction we'll need to make when landing 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.

A good rule of thumb is to estimate the crosswind component is to first calculate the difference between the runway heading and the magnetic wind direction. Then use a clock face to estimate the crosswind component. It overestimates by a bit. 15° is a quarter hour so the crosswind is ¼ of the wind. 30° is half an hour so the crosswind component is ½ the wind speed. Anything more than 60° is essentially all crosswind.

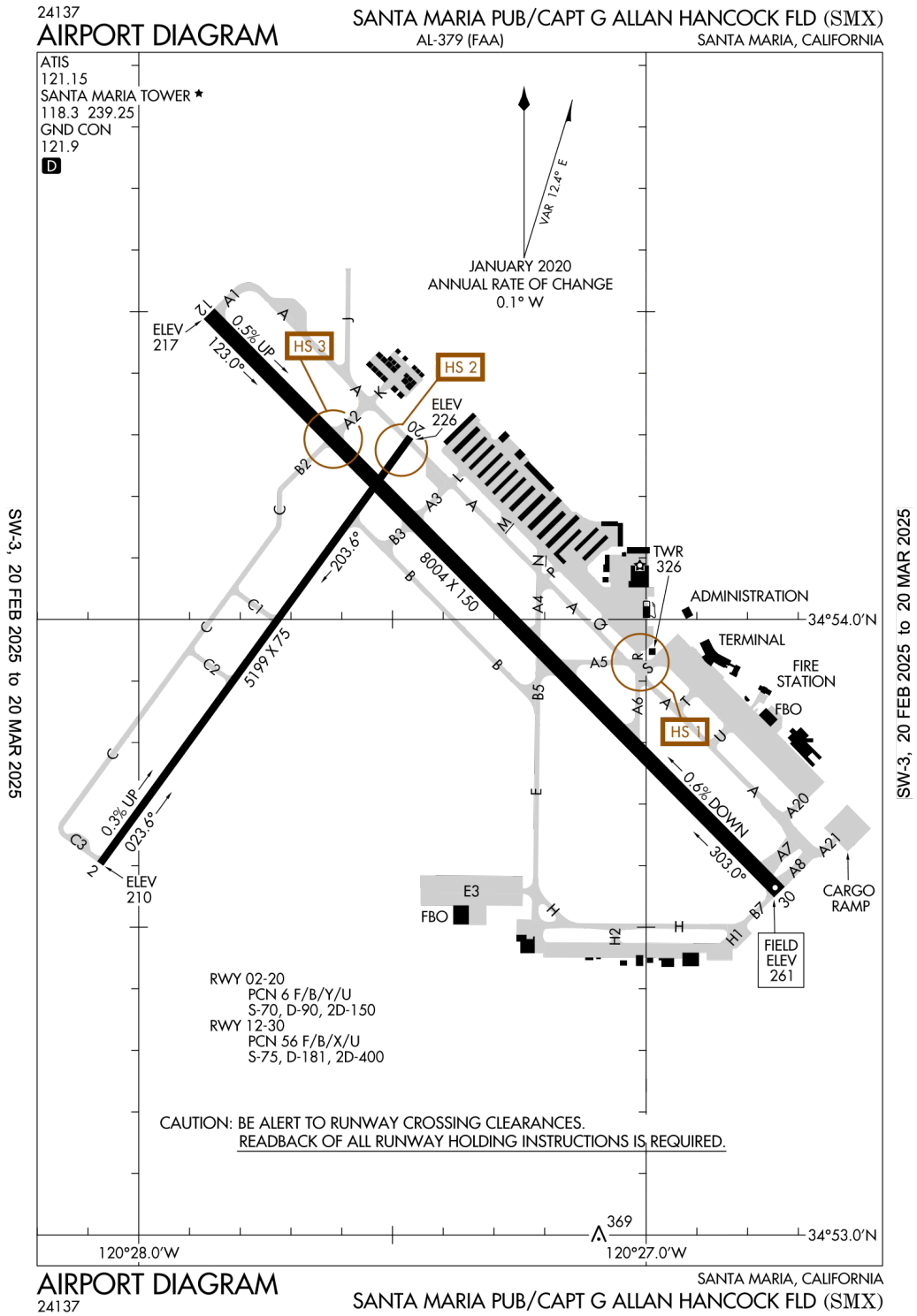
FIG 4-3-4

Headwind/Tailwind/Crosswind Component Calculator



Runway Numbering and Taxiway Designation

As an exercise, point out the runways and their designations on this airport diagram and find the magnetic heading of each of them.



Preflight: METARs, TAFs, and ATIS

Nautical Miles, Statute Miles

Wind speed is displayed in knots (KT) while visibility in statute miles (SM). In aviation we use nautical miles to measure distances and the distance travelled in an hour is measured in knots instead of miles per hour.

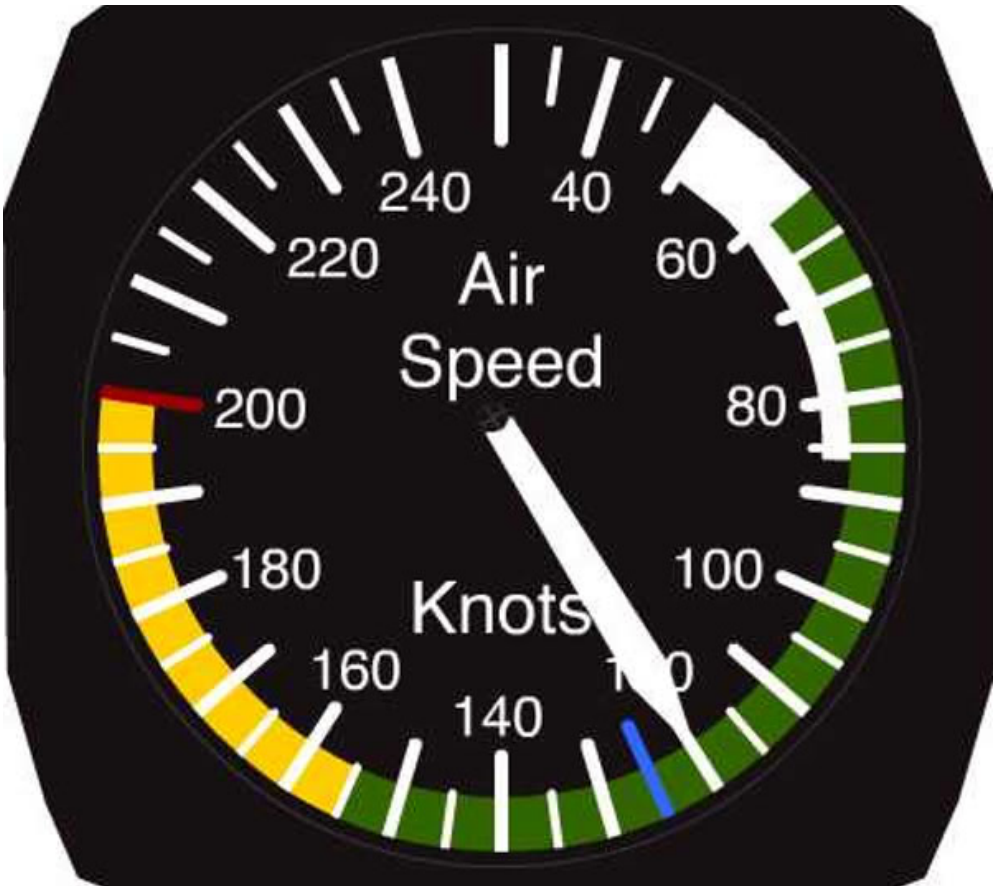
In airplanes we don't have to follow roads so we can measure distance between two points with a straight line. Aeronautical charts use latitude and longitude and it Historically, it was defined as the meridian arc length corresponding to one minute (1/60 of a degree) of latitude at the equator. A nautical mile is 1.15 statute miles. So if we're are traveling at 100 kts we are going 115 mph.

In the METAR and ATIS we use the wind speed to help determine the crosswind correction that we need when landing. Most small general aviation airplanes have a maximum demonstrated crosswind component of around 15-17 kts. That means that when the airplane left the factory a highly trained pilot was able to safely land with the wind coming directly perpendicular to the plane at 15-17 kts.

Visibility is important to pilots for two reasons. First for VFR pilots—those who are not allowed to fly in the clouds—we need to determine whether the visibility is good enough for us to take off or land. We are required to have ground visibility at the airport of at least 3 statute miles.
We also have rules for visibility minimums for flying in the different kinds of airspace as shown in the chart below.

If you are allowed to fly in the clouds, IFR, then there are minimum visibility rules for landing at an airport that use the reported visibility.

Airplanes built after the mid 1970s mostly have airspeed indictors calibrated in Knots. Before that they were in MPH and often showed both.



Visibility, Weather, Sky Condition

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 Cover	Contraction
Less than ⅛ (Clear)	SKC, CLR, FEW
⅛–⅖ (Few)	FEW
⅜–⅘ (Scattered)	SCT
⅝–⅞ (Broken)	BKN
⅛ or (Overcast)	OVC

Altitudes for cloud cover are given in hundreds of feet above the surface. KBOS has a few clouds at 5,500´ and is overcast at 25,000´ so VFR (visual flight rules) pilots can fly there. KNEN and KGNV are overcast at 400´ and 500´ so pilots flying under VFR won't be able to take off or land there.

The Aviation Weather website and your EFB will decode the weather section for you but if you want to do it yourself, or see what the remarks mean, this page is a handy decoder.

https://www.weather.gov/media/wrh/mesowest/metar_decode_key.pdf

Temperature and Dewpoint

°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

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.

When temperature and dewpoint meet, you get fog.

KSBP 241503Z 00000KT 10SM OVC002 10/10 A3019
RMK AO2 T01000100

Temperature and Dewpoint

When temperature and dewpoint are close together and below freezing, you get freezing fog—FZFG

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

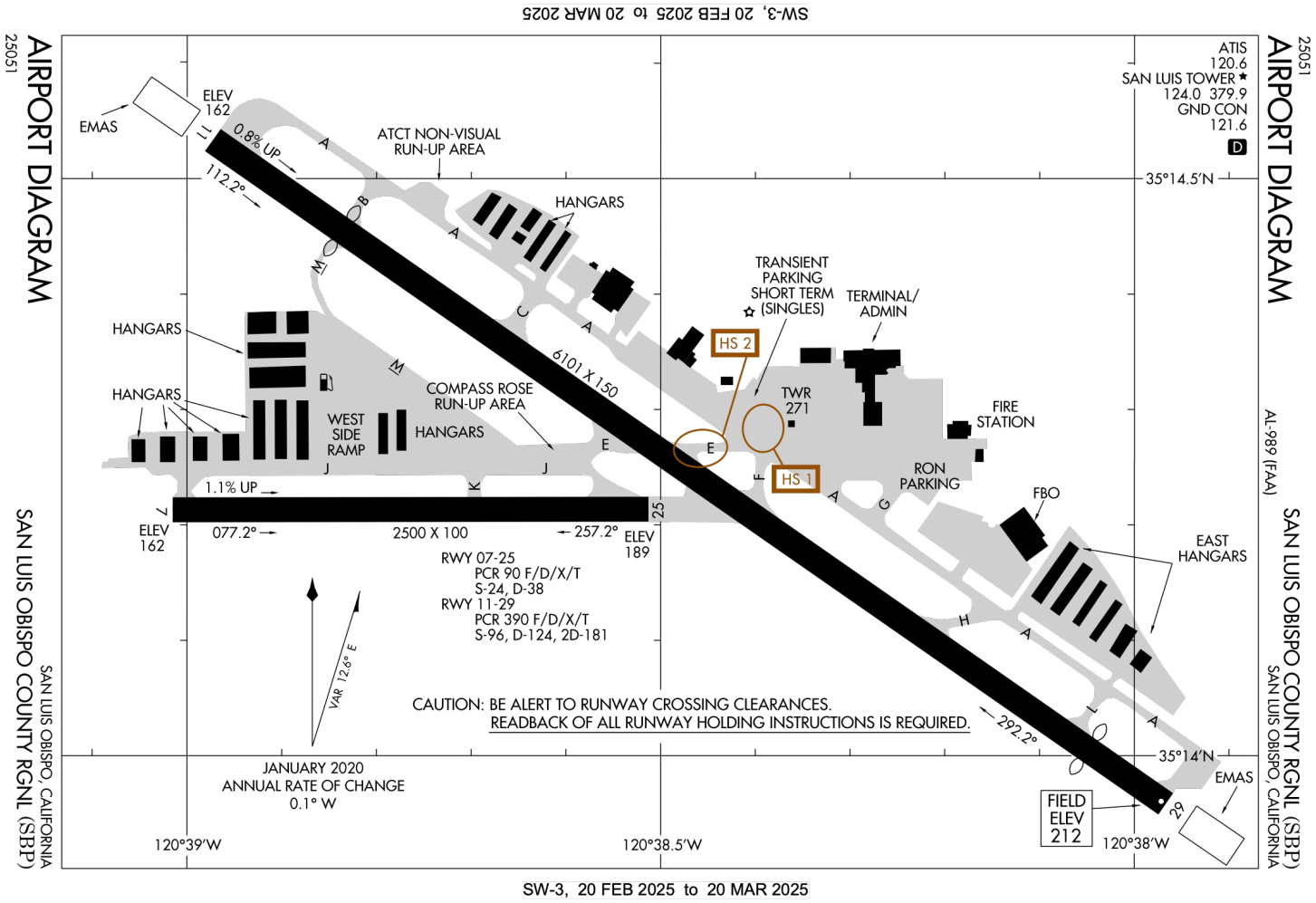
An altimeter is a special kind of barometer that we can adjust to show the pressure at sea level with standard temperature and pressure. 15°C and 29.92″ of mercury. When the altimeter is set to the value in the ATIS it should read very close to the field elevation.

High to low, look out below. The tiedown where I was parked is at about 190′ and the runway touchdown zone is 198′. This will definitely cause problems if you are on an IFR approach since you can come to within 200′ of the ground before you have to go around. You might think that you are at 500′ and can go down another 300′ but that would take you right into the ground.

If you forget to set your altimeter and the air pressure is higher than when you last flew, you have the opposite problem. If you are trying to get below the clouds, you might be able to go lower if you altimeter was set correctly. Suppose that the clouds are right at the legal limit of 200′. When you think you are at 200′ you are really at 400′ and still in the clouds. You would have to find somewhere else to land.

Taxiway Designation

Taxiways are named with letters or letters and numbers. For smaller airports, the taxiway along the primary runway is usually A, but there is no hard and fast rule. Sometimes the taxiways off the runway are labelled alphabetically like KSBP. Sometimes they use a letter and a number like KSMX we saw earlier. You need to familiarize yourself with the naming and where you are relative to the runway in use before you call for taxi instructions.



Traffic Pattern

When departing the airport we will tell the controller which direction we want to depart. We can ask for a straight out departure if we want to go more or less in a direction that aligns with the runway. We can as for a left or right crosswind departure if we want to go left or right of the airport. And we can ask for a downwind departure if we are headed in the opposite direction of the runway in use.

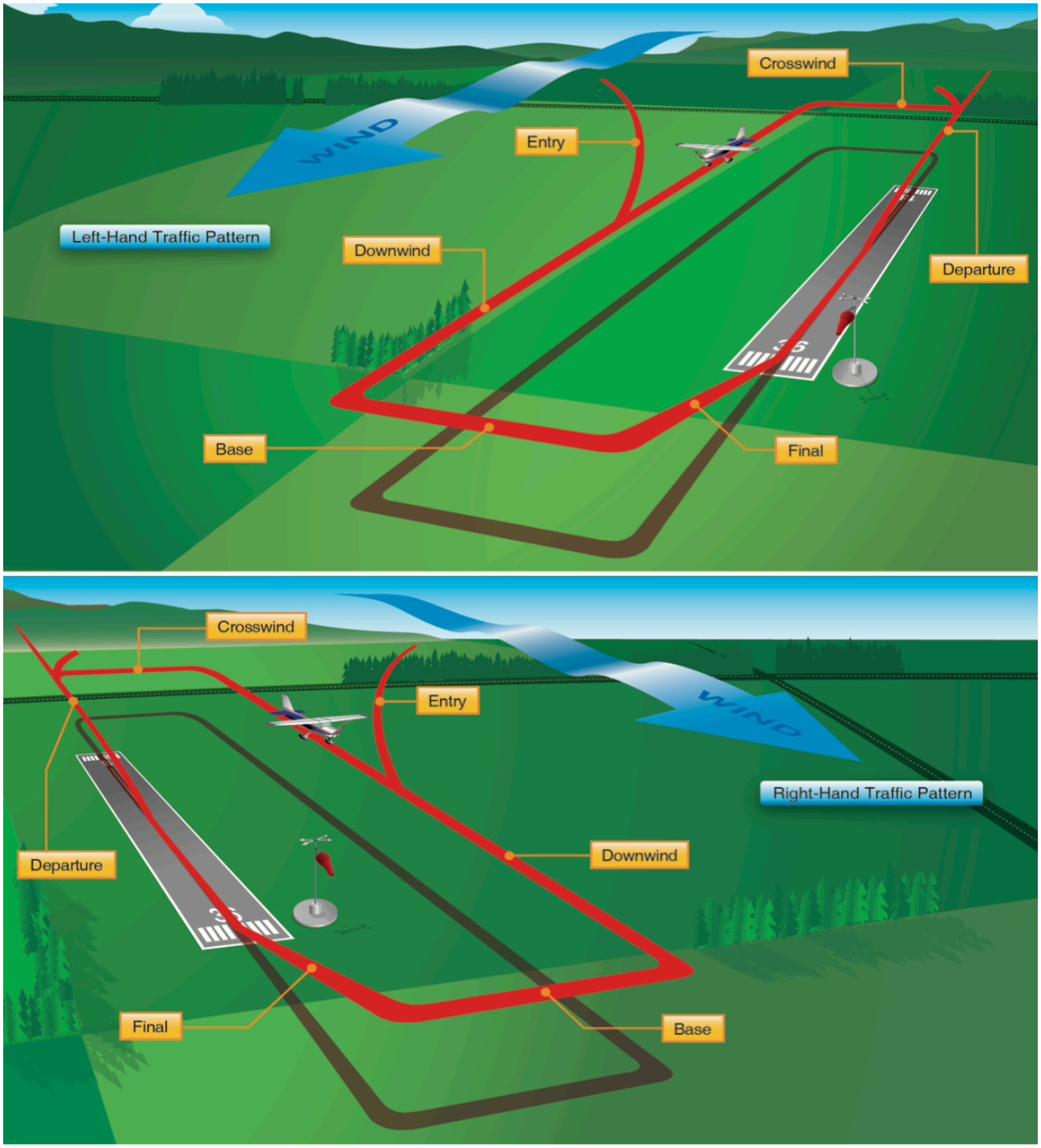


Figure 8-1. *Traffic Patterns*

Phonetic Alphabet

We use the phonetic alphabet to refer to letters because lots of letters sound the same—especially when you hear them over the radio in a noisy cockpit. e.g p/b, t/d, m/n.

If you've ever had to spell San Luis Obispo for someone over the phone, you appreciate the fact that we use the phonetic alphabet in aviation. Oscar, Bravo, India, Sierra, Papa, Oscar is a lot easier than saying O like in orange, B like in banana, I like in um, um, Idaho?, where was I…oh yeah P like in Pear, O like in orange. Oops I forgot S. Let me start over.

As an exercise, write you name and city using the labels for the phonetic alphabet. Say them out loud.

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)

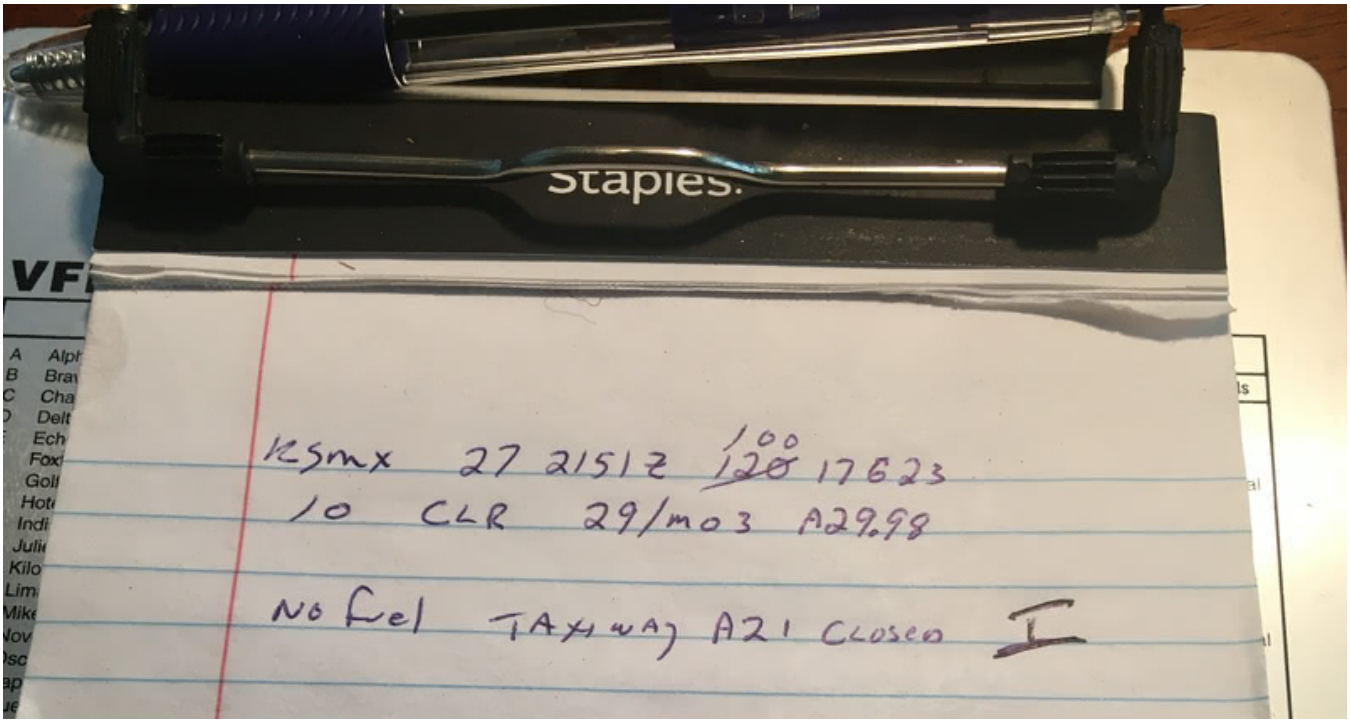
Getting the ATIS

They talk really fast sometimes so it's best if you write it down and sometimes you need to listen more than once. If you pull up the METAR and write it down before you listen, you will already have all of the numbers and you'll just need to verify them. 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.

Remember that 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.

KSMX 272151Z 12017G23KT 10SM CLR 29/M03 A2998
RMK AO2 SLP152 T02891033



I made a correction to the wind since the METAR is True and ATIS is Magnetic. The correction is either 10 or 20 degrees depending on rounding. The runways there are 12/30 so they are using runway 12. The wind is 20° off to the left of the runway and the crosswind component is 20/60 = ⅓ so it around 6 kts gusting to 8. That will be challenging since it's gusty but fine. The temperature is around 30 which is warm but not unpleasant. It's not a perfect day for flying, but it would be fun. When I call ground I'll tell them I have India.

Making 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, at West Side Hangars, Taxi via J 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.

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.

Call sign. You call sign is your tail number unless you are a commercial pilot or doing something like flying for MEDEVAC, Angel Flight and Pilots and Paws— Compassion,CMS

US starts with N, Antiques are still registered as NC. United Kingdom is G, Canada C, Mexico is XA, XB, XC

Speedbird is British Airways, Envoy (ENY) is American, SkyWest (SKY) is its own as are Alaska (AKA) and United (UAL). And we get charter flights like NetJets (EJA) and freight from Westair for Fedex (PCM) and Ameriflight for UPS (AMF).

When you are coming in to land you'll make the same call. If you are on flight following you don't have to let them know where you are because they'll get a handoff from the approach controller. If you are not being handed off, you need to tell them where you are and that you have the ATIS. I usually tell them my altitude as well. They'll come back with instructions to make left or right traffic or straight in to the runway in use. Depending on where you are, they might also tell you to make a left or right base entry to the pattern.

TAF

A TAF is similar to a METAR. The format is the same as a METAR except that after the time that it is issued it has the times the forecast is valid for and it leaves out the altimeter setting, temperature/dewpoint, and remarks. In this case the forecast period is 24 hours (some places it is 36). If the forecast changes significantly during the day, the time and new forecast are shown.

```
KSBP 271734Z 2718/2818 VRB03KT P6SM BKN250
  FM271900 13006KT P6SM SCT250
  FM280000 26008KT P6SM SCT250
  FM280300 VRB03KT P6SM SCT250
```

TAF for:	San Luis Obispo/San Luis Cnty, CA, US
Text:	KSBP 271734Z 2718/2818 VRB03KT P6SM BKN250
Forecast period:	1800 UTC 27 Thu Feb 2025 to 1900 UTC 27 Thu 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:	broken clouds at 25,000 ft
Text:	FM271900 13006KT P6SM SCT250
Forecast period:	1900 UTC 27 Thu Feb 2025 to 0000 UTC 28 Fri Feb 2025
Forecast type:	FM: standard forecast or significant change
Winds:	from the SE (130°) at 6 kt (3.1 m/s, 6.9 mph)
Visibility:	6+ mi (10+ km)
Clouds:	scattered clouds at 25,000 ft
Text:	FM280000 26008KT P6SM SCT250
Forecast period:	0000 UTC 28 Fri Feb 2025 to 0300 UTC 28 Fri Feb 2025
Forecast type:	FM: standard forecast or significant change
Winds:	from the W (260°) at 8 kt (4.1 m/s, 9.2 mph)
Visibility:	6+ mi (10+ km)
Clouds:	scattered clouds at 25,000 ft
Text:	FM280300 VRB03KT P6SM SCT250
Forecast period:	0300 UTC 28 Fri Feb 2025 to 1800 UTC 28 Fri Feb 2025
Forecast type:	FM: standard forecast or significant change
Winds:	variable at 3 kt (1.5 m/s, 3.5 mph)
Visibility:	6+ mi (10+ km)
Clouds:	scattered clouds at 25,000 ft