**Reading METAR Code**

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**METAR** (Meteorological Terminal Air Report) is the international standard code for hourly and special weather observations (*AMS Glossary*). Below is a sample METAR report from Saranac Lake, New York (KSLK).

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KSLK 032151Z AUTO 26004KT 4SM -RA BR FEW011 BKN022 OVC047 16/15 A2978 RMK AO2 RAE02B30 SLP082 60013 T01610150 53002=

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**KSLK**: Station Identifier, where the first letter represents a country, or group of countries (i.e., **K** = lower 48 U.S., M = Mexico). The next three letters identify the airport location (**SLK** = Saranac Lake, NY).

**032151Z**: Time of METAR issuance (ddhhmm). All times in UTC (GMT, or Z). 032151Z = 21:51 UTC on the 3rd of the month.

**AUTO**: Denotes that there was no human oversight. In this space, “**COR**” can also appear, which indicates a corrected METAR.

**26004KT**: Wind in knots (3 digit direction, 2-3 digit speed).

1 knot = 1.1508 mph.

Direction is in degrees, where 360 is northerly wind (from the north), 180 is southerly, 90 is easterly, and 270 is westerly.

26004KT = 4 knot wind at 260°.

If there’s a gust, then this would appear as something like 24009G19KT, a 9 kt wind with a gust of 19 kts.

**4SM**: Visibility, in statute miles and fractions. Examples: 4SM, 3/4SM, 10SM, 1 1/2SM. Values less than 1/4 SM are written M1/4SM.

**-RA BR**: Significant weather present (see table of codes for observed weather). –RA BR = Light rain and mist. Note that for station models, the most dominant, or simply the first, weather (obscuration) gets plotted.

**FEW011 BKN022 OVC047**: Cloud cover, height and type.

SKC or CLR: Sky clear

FEW: Few, 1/8-2/8 of sky covered

SCT: Scattered, 3/8-4/8 of sky covered

BKN: Broken, 5/8-7/8 of sky covered

OVC: Sky completely covered

Three digits represent the height of the cloud layer in hundreds of feet (FEW011 = Few clouds at 1,100 feet. OVC047 = Overcast at 4,700 feet.)

For a weather station model, fill in the sky cover as the greatest sky cover in a set. For the example above, the sky cover would be filled in as overcast (8/8).

The following can also appear in the cloud section of a METAR, though these are more commonly found in the remarks section (later):

TCU: Towering Cumulus

CB: Cumulonimbus

VV###: Vertical visibility (for an obscured sky cover). VV003 = Vertical visibility of only 300 ft.

**16/15**: Temperature and dew point temperature in degrees Celsius, rounded to the nearest degree. First number is temperature, second number is dewpoint. The letter M indicates negative values (M04/M08 = Temp. of -4, Dewpoint of -8).

**A2978**: Altimeter setting (based on “standard atmosphere”). In inches of mercury, with decimal out to the hundredths (A2978 = 29.78 in Hg)

**RMK**: Denotes that METAR “remarks” will follow. We’ll take a look at a few important RMK variables, and examine others later.

**SLP082**: Sea level pressure (in millibars, or hectopascals) with hundreds place missing, and a decimal out to the tenths.

Since sea level pressure will (almost) always be near 1000 mb, we can easily figure out the missing information. If the three digits after SLP are <500, add a 10. If they are >500, add a 9:

SLP082 = 1008.2 mb

SLP954 = 995.4 mb

SLP716 = 971.6 mb

SLP365 = 1036.5 mb

**T01610150**: Temperature and dew point out to the neartest tenth of a degree Celsius. The first four integers are temperature, and the next four are dewpoint.

T01610150: Temp = 16.1° C, Dew point = 15.0° C.

T02330094: Temp = 23.3° C, Dew point = 9.4° C.

If a value is negative, a “1” will appear before the value, as in the example below:

T11061189: Temp = -10.6° C, Dew point = -18.9° C.

**53002:** 3-hr Pressure Tendency. 5 tells us we are about to read pressure tendency information. The next digit, in this case a 3, tells us how the pressure is trending. Refer to the pressure tendency symbols in the station model packet. The following three digits describe the amount the pressure has risen or fallen in the past three hours, with a missing tenths place decimal.

53002: In the past three hours, the pressure fell before a greater rise. The total rise was 0.2 mb.

Table of codes for observed weather

Weather phenomena:

RA Rain SN Snow SG Snow Grains

DZ Drizzle IC Ice Crystals PL Ice pellets (sleet)

GS Small hail GR Hail UP Unknown precipitation

Obscurations to visibility:

BR Mist (>=5/8 mi) FG Fog (< 5/8 mi)

FU Smoke VA Volcanic Ash

SA Sand HZ Haze

PY Spray DU Widespread Dust

Other:

SQ Squall (strong wind) SS Sandstorm

DS Duststorm PO Dust/sand whirls

FC Funnel Cloud FC+ Tornado/waterspout

Qualifiers (for RA, DZ, SN, PL):

- Light

(No sign) Moderate

+ Heavy

VC Vicinity

Examples:

+RA Heavy Rain

-DZ Light Drizzle

SN Moderate Snow

VCTS Thunderstorm in the vicinity (5-10 mi from observation)

Other Descriptors:

MI Shallow BC Patches PR Partial

TS Thunderstorm BL Blowing SH Showers

DR Drifting FZ Freezing

Examples:

BCFG Patchy fog

+TSRA Thunderstorm with heavy rain

BLSN Blowing snow

SHRA Moderate rain showers

TSRAGR Thunderstorm with moderate rain and hail