

# DAILY SYNOPTIC UPPER-AIR REPORTS

The upper-air reports are derived in the same general manner as the surface data. For the most part, these observations have been for 0400Z, especially in Canada, Alaska, and the United States, with some additional observations at other hours when the station does not report at or near 0400Z. In Russia, where observations are taken at local mean solar time, reports from all available hours have been included. Stations using the 1945 Radiosonde Code use the convention of adding 50 to the Greenwich time to indicate that part of the observation above 400 millibars of pressure, commonly known as the "second transmission." Many stations outside North America indicate the time of observation other than on-the-hour by adding to the Greenwich hour 25, for 15 minutes past the hour; 50, for 30 minutes; and 75, for 45 minutes. Although this has not been "subtracted out" of the reports, the date has been listed chronologically by hour within station.

## Assignment of Index Numbers:

The same method used in assigning station numbers in surface reports has been employed.

## Station Lists:

The upper-air numerical station index which precedes the upper-air data is presented in the same form as the surface index. The alphabetic index following the charts includes all stations, both surface and upper-air. Stations for upper-air only are designated with a single asterisk; those for both upper-air and surface, with two asterisks; while those for surface only are merely listed.

## Method of Presentation:

The upper-air data are presented in the same general way as the surface data. Stations are listed numerically within certain geographical areas according to their International Index Numbers. The teletype data have been edited for obvious errors, garbled data, etc.; but no attempt has been made to present the various winds aloft and radiosonde codes in a standard-level form. To the right of each line of the listed observations is a code number which indicates the type of code used for that report, as follows:

- |                  |          |
|------------------|----------|
| 1. PIBAL         | 5. RA0BS |
| 2. RAWIN         | 6. PRAWT |
| 3. RABAL         | 7. PRAT  |
| 4. Russian PIBAL | 8. CORAC |
| 9. Russian RA0RS |          |

While the upper-air observations usually have more than one line to an observation, the station number and hour appear only on the first line.

All land stations are listed first, and are followed by ship reports.

## Description of Codes:

### 1. Winds Aloft

- a. IIIGG Hddvv Hddvv ..... Hddvv
- b. IIIGG Hddvv Hddvv ..... 9999n Hddvv
- c. IIIGG Hddvv Hddvv ..... Hddvv C<sub>L</sub>C<sub>M</sub>H<sub>H</sub>M
- d. IIIGG HHddv<sub>5</sub> HHddv<sub>5</sub> ..... HHddv<sub>5</sub>
- e. IIIGG 8ddvv 9ddvv 0ddvv ..... M<sub>x</sub>H<sub>x</sub>H<sub>x</sub>C  
(Russian)

C	International cloud code.		
C <sub>L</sub>	Form of low cloud (International code).		
C <sub>M</sub>	Form of middle cloud (International code).		
dd	Wind direction in tens of degrees.		
GG	Greenwich hour - Local mean solar time (Russian code).		
H	Height in thousands feet meters.		
HH	Height of last observation.		
HH	Height in hectometers.		
H <sub>x</sub> H <sub>x</sub> H <sub>x</sub>	Height at which observations were discontinued in tens of meters.		
III	Station index number.		
M	Reason for ceasing upper wind observation (International code).		
M <sub>x</sub>	Reason for ceasing upper wind observation (Russian code).		
0	- Entering cloud	5	- Lost behind cloud
1	- Lost in fog	6	- Lost in background
2	- Lost in mist	7	- Lost in distance
3	- Lost accidentally	8	- Lost, balloon burst
4	- Lost in precipitation	9	- Lost other causes
v <sub>5</sub>	Wind speed (International code).		
vv	Wind speed in miles per hour/knots.		
vv	Wind speed in meters per second (Russian code).		
8,9,0,1 etc.	Height levels (Russian code).		
8	- Surface		
9	- 200 meters		
0	- 500 meters		
1	- 1000 meters		
2	- 2000 meters		
.	.		
.	.		
.	.		
0	- 10000 meters		
9999 <sub>n</sub>	Change in decade of thousands, the figure for n to give the tens of thousands digit for levels following.		
Code "a" is generally used in North America and from stations controlled by United States. Code "b" is readily identified by group, 9999 <sub>n</sub> , and is used mainly in Europe. Code "c" may be identified by its last group and is also used in some European reports. Code "e" is identified by its height indicators and by the code number 4 at the extreme right hand column of each line of the observation.			
Only when a station designates its winds-aloft observation by the word RAWIN or RABAL have the codes 2 and 3 been listed in the right hand column.			
2.	RA0RS		
a.	1945 Radiosonde Code.		
	IIIGG P <sub>o</sub> P <sub>o</sub> T <sub>o</sub> T <sub>o</sub> U <sub>o</sub> U <sub>o</sub> x <sub>1</sub> x <sub>2</sub> x <sub>3</sub> 00hhh TTU <sub>m</sub> r <sub>m</sub> r <sub>r</sub>		
	(Oddvv) 85hhh TTU <sub>m</sub> r <sub>m</sub> r <sub>r</sub> 70hhh TTU <sub>m</sub> r <sub>m</sub> r <sub>r</sub>		
	50hhh TTU <sub>m</sub> r <sub>m</sub> r <sub>r</sub> nnPPP TTU <sub>m</sub> r <sub>m</sub> r <sub>r</sub> .....		
	IIIG <sub>50</sub> G <sub>50</sub> 30hhh TTU <sub>m</sub> r <sub>m</sub> r <sub>r</sub> (Oddvv) 20hhh		

TTUm<sub>r</sub>m<sub>r</sub> 10hhh TTUm<sub>r</sub>m<sub>r</sub> nnPPP TTUm<sub>r</sub>m<sub>r</sub> ....  
 101A<sub>df</sub>A<sub>df</sub>  
 b. IIIGG H<sub>d</sub>H<sub>d</sub>P<sub>1</sub>P<sub>1</sub> TTTUU .... 00000  
 H<sub>d</sub>H<sub>d</sub>H<sub>d</sub>H<sub>d</sub> TTTUU ....  
 c. PRAWT  
 IIIGG P<sub>o</sub>P<sub>o</sub>P<sub>o</sub>T<sub>o</sub>T<sub>o</sub> U<sub>o</sub>U<sub>o</sub>DDv n<sub>0</sub>n<sub>9</sub>n<sub>8</sub>n<sub>7</sub>n<sub>6</sub> n<sub>5</sub>n<sub>4</sub>n<sub>3</sub>n<sub>2</sub>n<sub>1</sub>  
 HHTTU Uddvv 95TTU Uddvv HHTTU Uddvv 85TTU  
 Uddvv .... 77788 P<sub>1</sub>P<sub>2</sub>P<sub>3</sub>P<sub>4</sub>P<sub>5</sub> PPTTU Uddvv  
 ....  
 d. PRAT  
 IIIGG P<sub>o</sub>P<sub>o</sub>P<sub>o</sub>T<sub>o</sub>T<sub>o</sub> U<sub>o</sub>U<sub>o</sub>KK- n<sub>0</sub>n<sub>9</sub>n<sub>8</sub>n<sub>7</sub>n<sub>6</sub> n<sub>5</sub>n<sub>4</sub>n<sub>3</sub>n<sub>2</sub>n<sub>1</sub>  
 HHTTU 95TTU HHTTU 85TTU HHTTU .... 77788  
 P<sub>1</sub>P<sub>2</sub>P<sub>3</sub>P<sub>4</sub>P<sub>5</sub> ...PX PPTTU  
 e. CORAC  
 IIIGG P<sub>o</sub>P<sub>o</sub>P<sub>o</sub>T<sub>o</sub>T<sub>o</sub> U<sub>o</sub>U<sub>o</sub>x<sub>1</sub>x<sub>2</sub>x<sub>3</sub> (Oddvv) P<sub>1</sub>P<sub>1</sub>h<sub>1</sub>h<sub>1</sub>  
 T<sub>1</sub>T<sub>1</sub>U<sub>1</sub>u<sub>1</sub> P<sub>2</sub>P<sub>2</sub>h<sub>2</sub>h<sub>2</sub> T<sub>2</sub>T<sub>2</sub>U<sub>2</sub>u<sub>2</sub> ....  
 a. 11199 n<sub>n</sub>PPP TTUuu  
 or  
 77788 P<sub>1</sub>P<sub>1</sub>T<sub>1</sub>T<sub>1</sub>U<sub>1</sub> .... 10171  
 1u<sub>1</sub>u<sub>1</sub>u<sub>2</sub>u<sub>2</sub> 3u<sub>3</sub>u<sub>3</sub>u<sub>4</sub>u<sub>4</sub> etc.  
 f. Russian RAOB  
 IIIGG H<sub>1</sub>H<sub>1</sub>H<sub>1</sub>T<sub>1</sub>T<sub>1</sub> H<sub>2</sub>H<sub>2</sub>H<sub>2</sub>T<sub>2</sub>T<sub>2</sub> .... 98765  
 H<sub>a</sub>H<sub>a</sub>PPP T<sub>a</sub>T<sub>a</sub>T<sub>a</sub>UU QQEE H<sub>b</sub>H<sub>b</sub>PPP T<sub>b</sub>T<sub>b</sub>T<sub>b</sub>UU  
 QQEE ....

A<sub>df</sub>A<sub>df</sub> Form of additional data follows  
 (1945 Radiosonde code).

dd Wind direction in tens of degrees.  
 EE Equivalent potential temperature  
 in °C.  
 GG Greenwich hour - Local mean solar  
 time in Russian.  
 HH (PRAT AND PRAWT) Height in tens  
 of feet or whole meters dependent  
 on KK.  
 H<sub>a</sub>H<sub>a</sub>, H<sub>b</sub>H<sub>b</sub> Height in hectometers.  
 H<sub>d</sub>H<sub>d</sub> Height in hundreds of geodynamic  
 meters.  
 H<sub>1</sub>H<sub>1</sub>H<sub>1</sub>, H<sub>2</sub>H<sub>2</sub>H<sub>2</sub> (Russian code) Height at pressure  
 levels as follows:  
 1 - 1000 mb. 6 - 400  
 2 - 900 7 - 300  
 3 - 700 8 - 200 etc.  
 4 - 500  
 h<sub>1</sub>h<sub>1</sub>h<sub>1</sub>, h<sub>2</sub>h<sub>2</sub>h<sub>2</sub> Height in tens of feet or whole  
 meters.  
 III Station index number.

KK Indicator of form of report in  
 PRAT code.  
 m<sub>r</sub>m<sub>r</sub> Mixing ratios in grams of water  
 vapor per kilogram of dry air.  
 nn Gives significant levels given  
 consecutively.  
 hh Gives height of level in 100's  
 of feet or tens of meters accord-  
 ing to regional agreement.  
 n<sub>0</sub>n<sub>9</sub>n<sub>8</sub>n<sub>7</sub>n<sub>6</sub> n<sub>5</sub>n<sub>4</sub>n<sub>3</sub>n<sub>2</sub>n<sub>1</sub> Thousands figure in heights above  
 M.S.L. of the 1000 mb, 900 mb, etc.  
 PP Pressure in tens of millibars.  
 PPP Pressure in whole millibars.  
 P<sub>o</sub>P<sub>o</sub>P<sub>o</sub> Station level pressure.  
 P<sub>1</sub>P<sub>1</sub>, P<sub>2</sub>P<sub>2</sub> Pressure in tens of millibars of  
 1st, 2nd, etc. levels.  
 P<sub>1</sub>P<sub>2</sub>P<sub>3</sub>P<sub>4</sub>P<sub>5</sub> Units figure of pressures for  
 following levels which report in  
 tens of millibars.  
 QQ (Russian code) Mixing ratio in  
 grams and tenths. Temperature of  
 air in whole degrees.  
 TT Temperature of air in whole degrees.  
 T<sub>o</sub>T<sub>o</sub> Temperature of air at surface.  
 T<sub>1</sub>T<sub>1</sub>, T<sub>2</sub>T<sub>2</sub> Temperature at certain levels.  
 TTT Temperature in degrees and tenths.  
 U Relative humidity (International  
 code).  
 UU Relative humidity in percent.  
 U<sub>o</sub>U<sub>o</sub> Relative humidity in percent at  
 surface.  
 u<sub>1</sub>u<sub>1</sub>, u<sub>2</sub>u<sub>2</sub> Moisture values indicated by x<sub>3</sub>.  
 vv Wind speed.  
 X Used to make a five digit group.  
 x<sub>1</sub>x<sub>2</sub>x<sub>3</sub> Indicator figures to show units used,  
 x<sub>1</sub> for heights, x<sub>2</sub> for wind, x<sub>3</sub> for  
 moisture values. (International  
 code).  
 O Indicator figure for wind group.  
 00000 Indicates that temperatures and  
 humidities are for fixed pressures,  
 1000, 900, 800 mb. etc.  
 00,85,70,50 etc. (1945 Radiosonde) Indicator figures  
 for 1000, 850, 700 mb. levels.

ALASKA PRIMARY	0150	643 LA CROSSE WIS 645 GREEN BAY WIS 653 HURON S DAK 657 ST PAUL MINN 662 RAPID CITY S DAK 667 GLENDALE WIS 677 BILLINGS MONT 679 BUTTE MONT 681 RIO GRANDE FLD IDAHO 683 BURNS OREG 684 BETHKE 685 MCGRAITH 686 MCKEE 688 KOTZEBUE 689 BARROW 692 LONGVIEW ADAK ISLAND 695 GAMBLE	BELGIUM AND NETHERLAND PRIMARY	1510	RUSSIA IN ASIA SUPPLEMENTARY AREA 9 2329
950 KETCHIKAN		657 ST PAUL MINN	276 UCCLE	600 SYVODSHYI	
964 JUNEAU		662 RAPID CITY S DAK	293 DE BILT SOESTEER METH	619 ARKHARA	
965 YAKUTAT		667 GLENDALE WIS		649 OBLUCHE	
970 KODIAK		677 BILLINGS MONT		654 BIROBIDZHAN	
971 COOK INLET 13		679 BUTTE MONT		655 UD	
973 ANCHORAGE MERRILL FIELD		681 RIO GRANDE FLD IDAHO	300 BRUSSELS A DROME BEL	723 UDINSK	
974 FAIRBANKS WEEKS FIELD		683 BURNS OREG			
974 FAIRBANKS WEEKS FIELD		684 PENDLETON OREG			
974 FAIRBANKS WEEKS FIELD		693 EUGENE OREG			
974 FAIRBANKS WEEKS FIELD		712 CARIBOU MAINE			
974 FAIRBANKS WEEKS FIELD		713 PRESQUE ISLE MAINE			
974 FAIRBANKS WEEKS FIELD		733 MARQUETTE MICH			
974 FAIRBANKS WEEKS FIELD		745 DULUTH MINN			
974 FAIRBANKS WEEKS FIELD		747 INTERNATIONAL FALLS MINN			
974 FAIRBANKS WEEKS FIELD		753 FARGO N DAK			
974 FAIRBANKS WEEKS FIELD		764 BISMARCK N DAK			
974 FAIRBANKS WEEKS FIELD		767 WILLISTON N DAK			
974 FAIRBANKS WEEKS FIELD		776 GLASS MONT			
974 FAIRBANKS WEEKS FIELD		773 MISSOURA MONT			
974 FAIRBANKS WEEKS FIELD		775 GREAT FALLS MONT			
974 FAIRBANKS WEEKS FIELD		777 RAVENNA MONT			
974 FAIRBANKS WEEKS FIELD		782 ELLIOTT WASH			
974 FAIRBANKS WEEKS FIELD		785 SPOKANE FELTS FLD WASH			
974 FAIRBANKS WEEKS FIELD		793 SEATTLE KING CO APT WASH			
974 FAIRBANKS WEEKS FIELD		798 TACOMA ISLAND WASH			
974 FAIRBANKS WEEKS FIELD					
ALASKA ARBITRARY	0151				
973 ANCHORAGE ELMENDORF FLD					
ALASKA SUPPLEMENTARY	0152				
005 AMCHITKA					
007 UNNAK ALASKA					
009 FORT GLENN					
022 CHATHAM					
048 ANNETTE IS					
308 FORT RANDALL COLD BAY					
549 SHEMYES ISLAND					
CANADA PRIMARY	0250				
600 SABLE ISLAND N S					
601 DARTMOUTH N S					
602 MUNICH N S					
607 DORVAL QUE					
628 OTTAWA ONT					
727 CHATHAM N S					
731 VILLE PATRICIA BAY B C					
803 GANDER LAKE NFLD					
815 STEPHENVILLE NFLD					
821 GLOUCESTER B C					
826 NITCHEGOON QUE					
831 KAPUSKASING ONT					
836 MOOSEJANE ONT					
842 GUY CARBOON ONT					
852 WINNIPEG MAN					
863 REGINA SASK					
867 THOMAS L S SPORT MAN					
869 PRINCE ALBERT SASK					
874 LETHBRIDGE ALTA					
877 CALGARY ALTA					
879 EDMONTON ALTA					
885 CARMEL B C					
889 VICTORIA C B C					
890 PEACE ARCH B C					
907 PORT HARRISON QUE					
909 FROBISHER BAY BAFFIN IS					
924 GATINEAU AIRPORT MAN					
945 CORAL HARBOUR NWT					
916 CHESTERFIELD NWT					
918 ARCTIC BAY NWT					
923 MACKENZIE BAY					
934 FORT SMITH AIRPORT NWT					
935 HAY RIVER AIRPORT NWT					
936 KILOMETER POINT NWT					
940 GRANDE PRAIRIE ALTA					
945 FORT NELSON B C					
946 FORT SEDGWICK AIRPORT NWT					
950 TATSONS LAKE Y T					
964 WHITEHORSE Y T					
968 AKLAVIK NWT					
CANADA ARBITRARY	0251				
CANADA SUPPLEMENTARY	0252				
043 NORMAN WELLS AIRPORT NWT					
069 WAGNER ALTA					
109 PORC HARDY B C					
109 LIFE GUARDIAN LAB					
182 MECATINA LAB					
188 MINGAN QUE					
UNITED STATES PRIMARY	0350				
201 KEY WEST FLA					
202 MIAMI FLA					
205 ORLANDO FLA					
206 GAITHERVILLE FLA					
208 CHARLSTON S C					
211 TAMPA FLA					
214 TALLAHASSEE FLA					
215 ATLANTA GA					
220 APALACHICOLA FLA					
222 PENSACOLA FLA					
223 WILMINGTON NC					
226 MONTGOMERY DANIELLY FLD ALA					
228 BIRMINGHAM ALA					
231 NEW ORLEANS LA					
232 BIRMINGHAM					
235 JACKSON MISS					
240 LAKE CHARLES LA					
241 NEW ORLEANS LA					
240 SHREVEPORT LA					
250 BROWNSVILLE TEX					
255 GATES CHRISTI TEX					
258 LAREDO TX					
253 SAN ANTONIO TEX					
256 FORT STOCKMEAD FLD TEX					
261 DEL RIO TEX					
265 BIG SPRINGS TEX					
266 ROSWELL N MEX					
270 EL PASO TEX					
274 TUCSON ARIZ					
280 PHOENIX ARIZ					
290 BURBANK CALIF					
290 SAN DIEGO CALIF					
304 HARTERAS C					
305 RALEIGH AIRPORT N C					
306 FT DODGE IOWA					
308 NORFOLK VA					
310 OCEAN POINT N C					
313 SPARTANBURG S C					
317 GREENSBORO N C					
322 CHATTANOOGA TENN					
326 KNOXVILLE TENN					
327 NASHVILLE TENN					
340 LITTLE ROCK ARK					
353 OKLAHOMA CITY OKLA					
356 TULSA OKLA					
365 ALBUQUERQUE N MEX					
374 WINSLOW ARIZ					
384 SAN FRANCISCO CALIF					
386 LAS VEGAS NEV					
394 SANTA MONICA CALIF					
403 RICHMOND VA					
405 WASHINGTON D C					
408 PHOENIX AZ					
409 LAKEHURST N J					
410 LYNCHBURG F GLENN APT VA					
421 COVINGTON KENTUCKY					
423 LOUISVILLE KY					
425 HUNTINGTON W V A					
425 CINCINNATI OHIO					
426 COLUMBUS OHIO					
432 EVANSVILLE IND					
438 INDIANAPOLIS IND					
439 SPRINGFIELD ILL					
440 SPRINGFIELD MO					
446 OMAHA NEB					
446 KANSAS CITY MO					
454 WICHITA KANS					
464 PUEBLO COLORADO					
465 GOODLAND KANS					
479 UNION CITY GET					
483 SACRAMENTO CALIF					
485 ELY YELLAND FLD NEV					
486 RENO TAHOE FLD NEV					
493 OAKLAND CALIF					
497 AUBURN CALIF					
501 REDWOOD CALIF					
506 HANTUCKET MASS					
508 HARTFORD CONN					
509 BOSTON MASS					
512 PHILLIPSBURG PA					
512 BINGHAMTON N Y					
514 ALBANY N Y					
519 ROCHESTER NY					
520 PITTSBURGH PA					
522 AKRON OHIO					
523 COLUMBUS OHIO					
531 CHANUTE FIELD ILL					
533 FORT WAYNE ILL					
534 CHICAGO ILL					
536 TOLEDO OHIO					
537 DETROIT MICH					
544 BOLIVIA ILL					
546 MILWAUKEE WIS					
575 ROCK SPRINGS WYO					
576 LANDER WYO					
576 BONNIE DOUG IDAHO					
581 ELKO NEV					
583 WINNEMOCCA NEV					
585 HEPPNER OREG					
597 HOPPER OREG					
606 PORTLAND MAINE					
617 BURLINGTON VT					
639 CASPER WYO					
572 CITY OF UTAH					
574 ROCK SPRINGS WYO					
575 OGDEN UTAH					
576 LANDER WYO					
576 BONNIE DOUG IDAHO					
582 ELKO NEV					
583 WINNEMOCCA NEV					
585 HEPPNER OREG					
597 HOPPER OREG				</td	