NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

April 27, 2018

Weather Study

METEOROLOGY

PLD18FR002

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A. ACCIDENT

Location: Dallas, Texas
Date: February 23, 2018
Time: about 0645 central standard time (1245 UTC)[1]
Accident: Single-family residence explosion

B. METEOROLOGIST

Mike Richards
Senior Meteorologist
Operational Factors Division (AS-30)
National Transportation Safety Board

C. DETAILS OF THE INVESTIGATION

The National Transportation Safety Board's meteorological specialist did not travel in support of this accident investigation and gathered all weather data remotely. Unless otherwise noted, all times are in central standard time (CST) for February 23, 2018 (based upon the 24-hour clock), directions are referenced to true north, distances are in nautical miles.

Coordinates used for the accident location: 32.86828333° north latitude, 96.8597333° west longitude, at an elevation of about 485 feet.

D. WEATHER INFORMATION

1.0 Precipitation

Liquid-equivalent precipitation data for Dallas Love Field Airport (DAL) in Dallas, Texas, which was located about 1 mile south of the accident site at an elevation of about 485 feet, was obtained from the National Weather Service (NWS) and from the Applied Climate Information System (ACIS).[2] Daily precipitation totals for DAL for the time period December 1, 2017 through February 23, 2018, can be found in Attachment 1. A graph of the cumulative precipitation totals for this time period may be found in Figure 1 of this report.

Between December 1, 2017 and February 23, 2018, DAL saw 13.07 inches of liquid-equivalent precipitation (the normal[3] amount is 6.89 inches). During the months of December 2017 and

[1] UTC – abbreviation for Coordinated Universal Time
[2] ACIS is a system architecture developed, maintained, and operated by the National Oceanic and Atmospheric Administration Regional Climate Centers. Further information on ACIS can be found at http://www.rcc-acis.org/index.html
[3] "Normal" values for DAL stated in this report and Attachment 1 are derived from observations made between

January 2018, DAL recorded 4.28 inches (the normal is 2.74 inches) and 0.35 inches (the normal is 2.06 inches) of liquid-equivalent precipitation, respectively. 9.68 inches of liquid-equivalent precipitation was observed at DAL between 0000 CST on February 1, 2018, and 0700 CST on February 23, 2018 (the normal for this period is about 2.08 inches[4]).

The following are notable liquid-equivalent maximum precipitation records[5] set for DAL between December 1, 2017, and February 23, 2018:

- 3.21 inches recorded on December 19, 2017, was the record daily[6] total for that calendar day
- 3.83 inches recorded on February 20, 2018, was the record daily total for that calendar day
- 1.66 inches recorded on February 21, 2018, was the record daily total for that calendar day
- 7.14 inches recorded between February 1, 2018, and February 22, 2018, was the record month-to-date total for that time period
- 8.44 inches[7] recorded between February 1, 2018, and February 23, 2018, was the record month-to-date total for that time period
- 5.49 inches recorded between February 20, 2018, and February 21, 2018, was the 22nd highest recorded two-day total in observed history
- 5.49 inches recorded between February 20, 2018, and February 21, 2018, was the record two-day total for the month of February in observed history
- 3.83 inches recorded between February 19, 2018, and February 20, 2018, was the 4th highest two-day total for the month of February in observed history
- 6.14 inches recorded between February 20, 2018, and February 22, 2018, was the record three-day total for the month of February in observed history

2.0 Temperature

Official weather observations for DAL between 2353 CST on February 20, 2018, and 2253 CST on February 23, 2018, were provided by the NWS, and those reports in raw form, as well as extracted temperature information in degrees Fahrenheit (°F), are provided in Attachment 1. A graph of these extracted temperature data may be found in Figure 2 in this report.

1981 and 2010.

[4] The normal for this period that includes the full day of February 23, 2018, is 2.09 inches.

[5] For determining records, the time period for consideration was August 1, 1939, through April 23, 2018.

[6] Daily precipitation totals are calculated between 0000 and 2359 local time.

[7] 8.38 inches was recoded between 0000 CST on February 1, 2018, and 0700 CST on February 23, 2018.

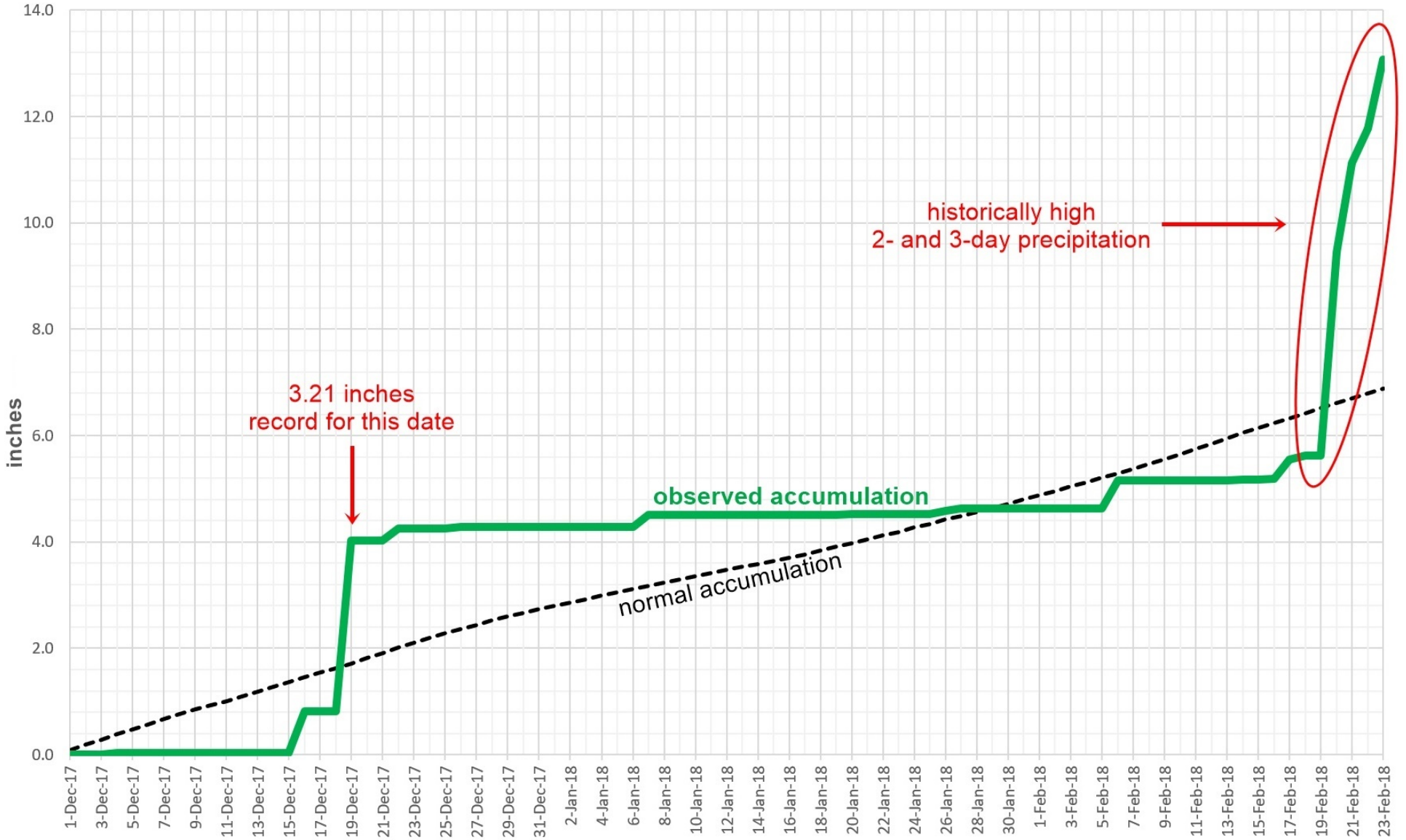

Figure 1 – Liquid-equivalent precipitation accumulation (inches) at DAL for December 1, 2017, through February 23, 2018 at DAL, along with normal accumulations for this calendar period.

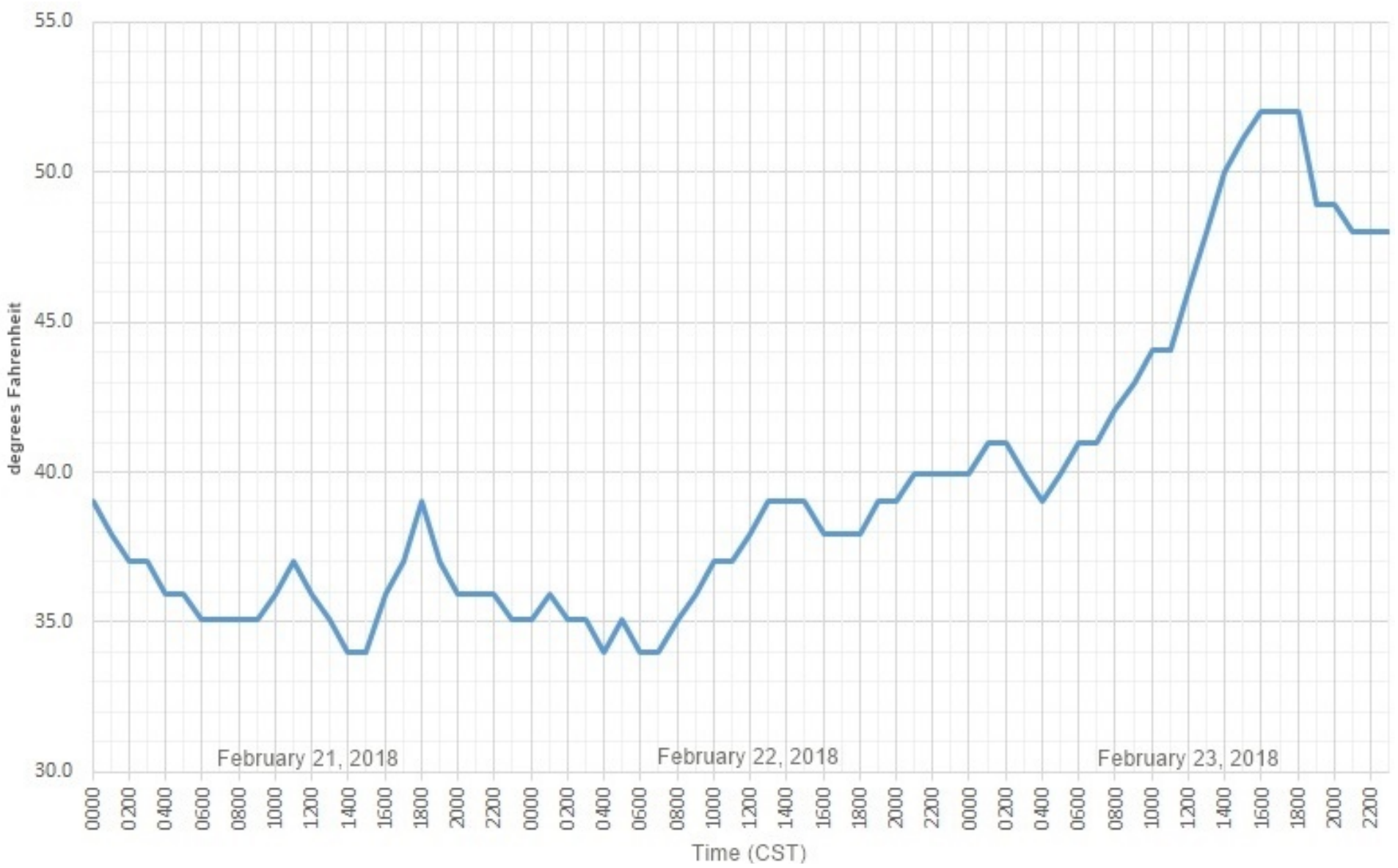

Figure 2 – Temperature observations (rounded to nearest whole °F) at DAL between 2353 CST on February 20, 2018, and 2253 CST on February 23, 2018. Times of observations have been rounded to the nearest whole hour.

Submitted by:

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Mike Richards
Senior Meteorologist

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Weather Study – Attachment 1

Precipitation and Temperature Information from
Dallas Love Field Airport in Dallas, Texas

METEOROLOGY

PLD18FR002

Submitted by: Mike Richards
NTSB, AS-30

Below is a table showing daily liquid-equivalent precipitation (and normal daily values) and snowfall observations for Dallas Love Field Airport (DAL) in Dallas, Texas, for December 1, 2017, through February 23, 2018.

On February 23, 2018, 1.24 inches of liquid-equivalent precipitation was observed between 0000 and 0700 central standard time (CST).

T = Trace amount

Date	Precipitation (inches)	Normal Precipitation (inches)	Snowfall (inches)
December 1, 2017	0.00	0.09	0.00
December 2, 2017	0.00	0.10	0.00
December 3, 2017	0.01	0.09	0.00
December 4, 2017	0.02	0.10	0.00
December 5, 2017	T	0.09	0.00
December 6, 2017	0.00	0.10	0.00
December 7, 2017	0.00	0.10	0.00
December 8, 2017	0.00	0.09	0.00
December 9, 2017	0.00	0.09	0.00
December 10, 2017	0.00	0.08	0.00
December 11, 2017	0.00	0.08	0.00
December 12, 2017	0.00	0.09	0.00
December 13, 2017	0.00	0.09	0.00
December 14, 2017	0.00	0.09	0.00
December 15, 2017	0.00	0.08	0.00
December 16, 2017	0.79	0.10	0.00
December 17, 2017	T	0.09	0.00
December 18, 2017	T	0.08	0.00
December 19, 2017	3.21	0.09	0.00
December 20, 2017	0.00	0.10	0.00
December 21, 2017	0.00	0.09	0.00
December 22, 2017	0.22	0.10	0.00
December 23, 2017	0.00	0.09	0.00
December 24, 2017	0.00	0.09	0.00
December 25, 2017	0.00	0.09	0.00
December 26, 2017	0.03	0.08	0.00
December 27, 2017	0.00	0.08	0.00
December 28, 2017	0.00	0.08	0.00
December 29, 2017	T	0.08	0.00
December 30, 2017	T	0.07	0.00
December 31, 2017	T	0.07	T
January 1, 2018	0.00	0.06	0.00
January 2, 2018	0.00	0.06	0.00
January 3, 2018	0.00	0.06	0.00
January 4, 2018	0.00	0.07	0.00

January 5, 2018	0.00	0.06	0.00
January 6, 2018	0.00	0.06	0.00
January 7, 2018	0.23	0.06	0.00
January 8, 2018	0.00	0.07	0.00
January 9, 2018	0.00	0.06	0.00
January 10, 2018	0.00	0.06	0.00
January 11, 2018	0.00	0.05	0.00
January 12, 2018	0.00	0.06	0.00
January 13, 2018	0.00	0.06	0.00
January 14, 2018	0.00	0.06	0.00
January 15, 2018	T	0.06	T
January 16, 2018	T	0.06	T
January 17, 2018	0.00	0.06	0.00
January 18, 2018	0.00	0.07	0.00
January 19, 2018	0.00	0.07	0.00
January 20, 2018	0.01	0.07	0.00
January 21, 2018	0.01	0.07	0.00
January 22, 2018	0.00	0.07	0.00
January 23, 2018	0.00	0.07	0.00
January 24, 2018	0.00	0.08	0.00
January 25, 2018	0.00	0.07	0.00
January 26, 2018	0.06	0.08	0.00
January 27, 2018	0.04	0.07	0.00
January 28, 2018	0.00	0.07	0.00
January 29, 2018	0.00	0.08	0.00
January 30, 2018	0.00	0.08	0.00
January 31, 2018	0.00	0.08	0.00
February 1, 2018	0.00	0.08	0.00
February 2, 2018	0.00	0.08	0.00
February 3, 2018	0.00	0.08	0.00
February 4, 2018	0.00	0.08	0.00
February 5, 2018	0.00	0.09	0.00
February 6, 2018	0.53	0.08	0.00
February 7, 2018	T	0.08	0.00
February 8, 2018	0.00	0.09	0.00
February 9, 2018	0.00	0.10	0.00
February 10, 2018	T	0.09	0.00
February 11, 2018	T	0.10	T
February 12, 2018	0.00	0.10	0.00
February 13, 2018	T	0.10	0.00
February 14, 2018	0.02	0.10	0.00
February 15, 2018	0.00	0.09	0.00
February 16, 2018	0.01	0.09	0.00
February 17, 2018	0.36	0.10	0.00
February 18, 2018	0.08	0.09	0.00

February 19, 2018	T	0.10	0.00
February 20, 2018	3.83	0.09	0.00
February 21, 2018	1.66	0.09	0.00
February 22, 2018	0.65	0.09	0.00
February 23, 2018	1.30	0.10	0.00

The following are raw weather observations from DAL for 2353 CST on February 20, 2018, through 2253 CST on February 23, 2018.

KDAL 210553Z 36013KT 9SM -RA FEW008 OVC010 04/02 A3017 RMK AO2 SLP213 P0004 60148 T00390022 10083 20039 402220039 51027 $

KDAL 210653Z 36013KT 3SM RA BR BKN009 OVC016 03/02 A3017 RMK AO2 SLP214 P0029 T00330022 $

KDAL 210753Z 35017G24KT 10SM -RA OVC010 03/01 A3020 RMK AO2 CIG 008V014 SLP225 P0004 T00280011 $

KDAL 210853Z 35013KT 9SM -RA OVC008 03/01 A3019 RMK AO2 SLP220 OCNL LTGICCG DSNT NE CB DSNT NE MOV NE P0000 60033 T00280011 50006 $

KDAL 210953Z 33013KT 4SM RA BR BKN010 BKN013 OVC037 02/01 A3021 RMK AO2 SLP229 P0027 T00220006 $

KDAL 211053Z 36015KT 6SM RA BR SCT009 BKN014 OVC080 02/01 A3023 RMK AO2 SLP236 P0014 T00220011 $

KDAL 211153Z 33009G17KT 8SM -RA FEW009 OVC010 02/01 A3028 RMK AO2 PRESRR SLP254 P0013 60087 70425 T00170006 10039 20017 53031 $

KDAL 211253Z 36013KT 6SM -RA BR BKN010 BKN015 OVC024 02/01 A3027 RMK AO2 SLP250 P0011 T00170006 $

KDAL 211353Z 02014KT 10SM BKN011 BKN022 OVC100 02/M01 A3029 RMK AO2 RAE45 SLP258 P0002 T00171006 $

KDAL 211453Z 03014G19KT 10SM BKN011 OVC019 02/01 A3026 RMK AO2 SLP248 BKN V SCT 60013 T00170006 58006 $

KDAL 211553Z 01009KT 10SM OVC011 02/01 A3028 RMK AO2 SLP254 T00220006 $

KDAL 211653Z 36011KT 10SM OVC010 03/01 A3026 RMK AO2 SLP246 CIG 009V011 T00280006 $

KDAL 211753Z 33012G20KT 7SM -RA OVC009 02/01 A3033 RMK AO2 RAB53 PRESRR SLP271 OCNL LTGIC CB DSNT W MOV NE P0000 60013 T00220006 10028 20011 53022 $

KDAL 211853Z 33015G23KT 4SM BR OVC007 02/01 A3031 RMK AO2 RAE53 SLP265 VIS SE-S 5 OCNL LTGIC CB DSNT W-NW MOV NE P0003 T00170006 $

KDAL 211953Z 35018G25KT 2SM RA BR BKN007 OVC013 01/00 A3031 RMK AO2 RAB08 SLP265 VIS 1 1/2 W-N OCNL LTGIC CB DSNT W-NW MOV NE P0005 T00110000 $

KDAL 212053Z 35014KT 4SM -TSRA BR SCT008 BKN028CB OVC055 01/00 A3028 RMK AO2 PK WND 35026/2008 TSB34 SLP255 OCNL LTGIC SE-S TS SE-S MOV NE P0028 60036 T00110000 55010 $

KDAL 212153Z 01007KT 8SM -RA SCT008 SCT040 BKN085 OVC130 02/02 A3023 RMK AO2 TSE00 SLP239 TS DSIPTD P0004 T00220017 $

KDAL 212253Z 07011G23KT 6SM RA FEW008 BKN075 OVC095 03/02 A3021 RMK AO2 PRESRR SLP232 P0010 T00280022 $

KDAL 212353Z 26012KT 6SM -RA BKN007 OVC010 04/03 A3027 RMK AO2 PRESRR SLP253 P0011 60061 T00390028 10039 20011 55002 $

KDAL 220053Z 31012G18KT 10SM BKN005 OVC008 03/02 A3026 RMK AO2 RAE47 SLP248 P0005 T00280017 $

KDAL 220153Z 32012KT 10SM BKN006 OVC009 02/01 A3029 RMK AO2 SLP260 T00220011 $

KDAL 220253Z 32011KT 10SM OVC007 02/01 A3031 RMK AO2 SLP265 60005 T00220011 53012 $

KDAL 220353Z 33013KT 4SM BR OVC005 02/02 A3032 RMK AO2 SLP270 T00220017 $

KDAL 220453Z 34009KT 3SM BR OVC004 02/01 A3031 RMK AO2 SLP266 T00170011 $

KDAL 220553Z 34009KT 5SM BR OVC005 02/01 A3030 RMK AO2 SLP261 60005 T00170011 10039 20017 400390011 58004 $

KDAL 220653Z 35008KT 5SM BR OVC005 02/01 A3030 RMK AO2 SLP263 T00220011 $

KDAL 220753Z 33008KT 2SM BR OVC003 02/01 A3029 RMK AO2 SLP258 T00170011 $

KDAL 220853Z 34006KT 1 1/2SM -DZ BR OVC003 02/01 A3030 RMK AO2 DZB13 SLP263 P0000 60000 T00170011 53002 $

KDAL 220953Z 35010KT 1 1/2SM -DZ BR OVC003 01/01 A3028 RMK AO2 SLP256 P0000 T00110011 $

KDAL 221053Z 34008KT 1 1/2SM BR OVC003 02/01 A3029 RMK AO2 DZE49 SLP260 P0000 T00170011 $

KDAL 221153Z 36011KT 4SM BR OVC004 01/01 A3028 RMK AO2 DZB17E45 SLP254 CIG004V007 P0000 60000 70079 T00110011 10022 20011 56009 $

KDAL 221253Z 35007KT 2SM BR OVC004 01/01 A3028 RMK AO2 SLP254 VIS NW-NE 1 3/4 T00110011 $

KDAL 221353Z 36007KT 1 1/2SM -DZ BR OVC004 02/01 A3027 RMK AO2 DZB49 SLP252 VIS NW-NE 1 1/4 OCNL LTGIC CB DSNT S-SW MOV NE P0000 T00170011 $

KDAL 221453Z 03009G15KT 330V060 2SM +TSRA BR OVC004CB 02/01 A3026 RMK AO2 DZE01RAB01 TSB02 SLP248 OCNL LTGICCG TS ALQDS MOV NE P0011 60011 T00220006 58005 $

KDAL 221553Z VRB06KT 3SM +TSRA BR BKN005 BKN024CB OVC049 03/02 A3028 RMK AO2 SLP255 VIS N 6 SE-SW 2 1/2 OCNL LTGICCG TS ALQDS MOV NE P0029 T00280017 $

KDAL 221653Z 29007KT 5SM -TSRA BR BKN005 OVC017CB 03/02 A3028 RMK AO2 SLP256 OCNL LTGICCG TS NW-NE MOV NE P0021 T00280022 $

KDAL 221753Z 30006KT 1 3/4SM -RA BR OVC005 03/03 A3027 RMK AO2 RAE38B46 TSE1657 SLP252 TS MOVD NE CIG 004V006 P0001 60062 T00330028 10033 20011 50004 $

KDAL 221853Z 33006KT 1 1/4SM -DZ BR OVC005 04/03 A3024 RMK AO2 RAE1757DZB18 SLP243 VIS SE 1 1/2 CIG 004V006 P0001 T00390033 $

KDAL 221953Z 31007KT 1 1/4SM R13L/5500VP6000FT -DZ BR OVC004 04/03 A3023 RMK AO2 SLP237 CIG 003V006 P0000 T00390033 $

KDAL 222053Z 31009KT 1 1/2SM -DZ BR OVC004 04/03 A3022 RMK AO2 SLP236 CIG 003V006 P0001 60002 T00390033 56016 $

KDAL 222153Z 31010KT 7SM -RA OVC007 03/03 A3023 RMK AO2 DZE16RAB16 SLP238 P0001 T00330028 $

KDAL 222253Z 33007KT 10SM BKN007 OVC018 03/02 A3023 RMK AO2 RAE37 SLP237 P0000 T00330022 $

KDAL 222353Z 32006KT 8SM OVC006 03/02 A3023 RMK AO2 SLP239 60003 T00330022 10039 20033 51003

KDAL 230053Z 00000KT 8SM BKN006 OVC024 04/03 A3024 RMK AO2 SLP240 T00390028

KDAL 230153Z 00000KT 8SM BKN006 OVC022 04/03 A3025 RMK AO2 SLP244 T00390028

KDAL 230253Z 00000KT 10SM SCT006 OVC022 04/03 A3026 RMK AO2 DZB28E49 SLP249 P0000 60000 T00440028 53010

KDAL 230353Z 32003KT 10SM SCT006 OVC022 04/03 A3026 RMK AO2 SLP249 T00440033

KDAL 230453Z 00000KT 10SM FEW007 OVC019 04/03 A3025 RMK AO2 SLP243 T00440033

KDAL 230553Z 34004KT 10SM BKN008 OVC020 04/03 A3024 RMK AO2 SLP242 60000 T00440033 10050 20033 400500011 58006

KDAL 230653Z 18003KT 10SM SCT008 OVC016 05/03 A3026 RMK AO2 PRESRR SLP246 T00500028

KDAL 230753Z 00000KT 7SM -TSRA FEW008 OVC016CB 05/03 A3024 RMK AO2 RAB28 TSB23 SLP239 OCNL LTGIC TS SE-SW MOV NE P0001 T00500033

KDAL 230853Z 26007KT 2SM TSRA BR SCT008 BKN015CB OVC022 04/04 A3026 RMK AO2 PRESRR SLP246 VIS W 1 OCNL LTGICCG TS ALQDS MOV NE P0059 60060 T00440039 53004 $

KDAL 230953Z 00000KT 4SM -RA BR BKN005 BKN011 OVC018 04/03 A3024 RMK AO2 TSE25 SLP241 OCNL LTGICCG DSNT ALQDS TS MOVD NE CB DSNT ALQDS MOV NE P0049 T00390033 $

KDAL 231053Z 06005KT 6SM -RA BR SCT005 BKN011 OVC018 04/04 A3022 RMK AO2 SLP233 OCNL LTGICCG DSNT SW-W-N CB DSNT SW-W-N MOV NE P0006 T00440039 $

KDAL 231153Z 05003KT 8SM SCT011 SCT024 BKN035 05/04 A3021 RMK AO2 RAE40 SLP231 OCNL LTGICCG DSNT W-N CB DSNT W-N MOV NE P0009 60124 70189 T00500039 10050 20039 56015 $

KDAL 231253Z 33004KT 7SM BKN007 OVC012 05/04 A3022 RMK AO2 RAB20E32 SLP235 P0000 T00500039 $

KDAL 231353Z 05003KT 6SM BR SCT006 OVC012 06/04 A3021 RMK AO2 SLP230 T00560044 $

KDAL 231453Z 09004KT 6SM BR BKN007 OVC013 06/05 A3021 RMK AO2 RAB14E33 SLP230 P0000 60000 T00610050 58001 $

KDAL 231553Z 11005KT 4SM -RA BR OVC006 07/06 A3020 RMK AO2 RAB05 SLP226 P0003 T00670056 $

KDAL 231653Z 33005KT 2SM BR OVC004 07/06 A3022 RMK AO2 RAE32 SLP235 P0002 T00670061 $

KDAL 231753Z 33006KT 3SM BR OVC004 08/07 A3021 RMK AO2 SLP228 60005 T00780067 10078 20050 58001 $

KDAL 231853Z 05005KT 5SM BR OVC004 09/08 A3015 RMK AO2 SLP208 T00890078 $

KDAL 231953Z VRB04KT 7SM OVC006 10/09 A3010 RMK AO2 SLP194 T01000089 $

KDAL 232053Z 12007KT 3SM BR OVC007 11/09 A3007 RMK AO2 SLP183 T01060094 56044 $

KDAL 232153Z 13007KT 4SM BR OVC005 11/10 A3006 RMK AO2 SLP177 T01110100 $

KDAL 232253Z 17003KT 2SM R13L/6000VP6000FT BR OVC004 11/11 A3006 RMK AO2 SLP178 T01110106

KDAL 232353Z 30003KT 3/4SM R13L/6000VP6000FT -DZ BR OVC004 11/11 A3005 RMK AO2 DZB2258 SLP174 P0000 60000 T01110106 10111 20072 56009

KDAL 240053Z 33006KT 3/4SM R13L/P6000FT -DZ BR OVC002 09/09 A3004 RMK AO2 SLP171 P0000 T00940094

KDAL 240153Z 33005KT 1 3/4SM -DZ BR OVC002 09/09 A3005 RMK AO2 SLP175 P0000 T00940089

KDAL 240253Z 31006KT 1/4SM R13L/3500V4500FT -DZ FG OVC002 09/09 A3005 RMK AO2 SLP176 P0000 60000 T00890089 53002

KDAL 240353Z 32007KT 3/4SM R13L/P6000FT BR OVC002 09/09 A3004 RMK AO2 DZE15B24E25RAB15E46 SLP173 P0001 T00890089

KDAL 240453Z 32004KT 2 1/2SM BR OVC003 09/09 A3003 RMK AO2 RAB31E48 SLP168 P0000 T00890089

Below is a table presenting hourly temperature observations at DAL between 2353 CST on February 20, 2018, and 2253 CST on February 23, 2018. Times in the table have been rounded to the nearest whole hour. These data have been extracted from the raw DAL observations and have been rounded to the nearest whole degree Fahrenheit (°F).

Date/Time (CST)	Temperature (°F)
February 21, 2018 0000	39
February 21, 2018 0100	38
February 21, 2018 0200	37
February 21, 2018 0300	37
February 21, 2018 0400	36
February 21, 2018 0500	36
February 21, 2018 0600	35
February 21, 2018 0700	35
February 21, 2018 0800	35
February 21, 2018 0900	35
February 21, 2018 1000	36
February 21, 2018 1100	37
February 21, 2018 1200	36

Date/Time (CST)	Temperature (°F)
February 22, 2018 1200	38
February 22, 2018 1300	39
February 22, 2018 1400	39
February 22, 2018 1500	39
February 22, 2018 1600	38
February 22, 2018 1700	38
February 22, 2018 1800	38
February 22, 2018 1900	39
February 22, 2018 2000	39
February 22, 2018 2100	40
February 22, 2018 2200	40
February 22, 2018 2300	40
February 23, 2018 0000	40

February 21, 2018	1300	35	February 23, 2018	0100	41
February 21, 2018	1400	34	February 23, 2018	0200	41
February 21, 2018	1500	34	February 23, 2018	0300	40
February 21, 2018	1600	36	February 23, 2018	0400	39
February 21, 2018	1700	37	February 23, 2018	0500	40
February 21, 2018	1800	39	February 23, 2018	0600	41
February 21, 2018	1900	37	February 23, 2018	0700	41
February 21, 2018	2000	36	February 23, 2018	0800	42
February 21, 2018	2100	36	February 23, 2018	0900	43
February 21, 2018	2200	36	February 23, 2018	1000	44
February 21, 2018	2300	35	February 23, 2018	1100	44
February 22, 2018	0000	35	February 23, 2018	1200	46
February 22, 2018	0100	36	February 23, 2018	1300	48
February 22, 2018	0200	35	February 23, 2018	1400	50
February 22, 2018	0300	35	February 23, 2018	1500	51
February 22, 2018	0400	34	February 23, 2018	1600	52
February 22, 2018	0500	35	February 23, 2018	1700	52
February 22, 2018	0600	34	February 23, 2018	1800	52
February 22, 2018	0700	34	February 23, 2018	1900	49
February 22, 2018	0800	35	February 23, 2018	2000	49
February 22, 2018	0900	36	February 23, 2018	2100	48
February 22, 2018	1000	37	February 23, 2018	2200	48
February 22, 2018	1100	37	February 23, 2018	2300	48