

Mulrooney, Marcella

From: Dutton, Sean
Sent: Tuesday, March 27, 2012 1:19 PM
To: Samson, Mike
Subject: Fw: BN-2012-0069-01 : Signed Information Note - Makkovik SAR Weather and Asset Analysis
Attachments: Signed Information Note - Makkovik SAR Weather and Asset Analysis.PDF; Information Note - Makkovik SAR Weather Analysis.doc; Information Note - Makkovik SAR Analysis.xls

Final, no changes from what you read other than approval.

Sean

Sent Via BlackBerry

----- Original Message -----

From: Barnes, Joanne
To: Burt, Paula; Langor, Fiona
Cc: Cowan, John O.; Dutton, Sean; English, Tracy
Sent: Tue Mar 27 13:17:05 2012
Subject: BN-2012-0069-01 : Signed Information Note - Makkovik SAR Weather and Asset Analysis

The attached information note has been approved by Minister McGrath.

Joanne

-----< HP TRIM Record Information >-----

Record Number: BN-2012-0069-01
Title : Signed Information Note - Makkovik SAR Weather and Asset Analysis

Information Note
Intergovernmental and Aboriginal Affairs Secretariat

Title: Makkovik SAR Weather and Asset Analysis

Issue: DND maintains that weather was one of several contributing factors for the decision not to send Primary Search and Rescue assets to Makkovik during the morning of January 30, 2012. The source information included in this note was taken from the DND Operational Log, which was released by DND and is available on the CBC website. A timeline analysis has also been prepared by IGAAS and is attached to this note.

Background and Current Status:

Timeline of Events on the morning of January 30, 2012:

- The CBC program, *The Fifth Estate*, reveals conflicting information surrounding DND's analysis of weather conditions on the morning of January 30, 2012.
- At 9:00am, the Environment Canada weather station in Makkovik reports that it is snowing, visibility is 1.6km and the temperature is -5.3C. CBC reports that it is snowing, visibility is 1.6km and the cloud ceiling was 600 feet.
- At 9:12am, both Department of National Defence (DND) and CBC reported that Fire and Emergency Services (FES-NL) called the Joint Rescue Command Centre (JRCC) to request assistance in the search.
- CBC reports that JRCC will commit 444 Squadron's Griffons at 5 Wing Goose Bay (213km from Makkovik) to the search because there are no serviceable Hercules aircraft in the area. In the CBC video maintains that the Hercules aircraft are used to support the Cormorant helicopters in case of emergency. Initial indications at 9:19am are that the Griffons were available.
- At 9:24am, the DND report states that it was understood that weather was hampering the ground search and rescue effort.
- CBC reports that at 9:28am, JRCC spoke with 5 Wing and it was apparent that the Griffons were not serviceable, citing a leaking oil line. Meanwhile, the pilot of a Woodward Aviation helicopter in Postville, 42km southwest of Makkovik, decides it is safe enough to fly and heads out to search. Weather is marginal but pilot says she can still search.
- At 9:33am, both DND and CBC report that JRCC advised FES-NL that the weather was not suitable in Makkovik and to call back when the weather improved. DND reported that weather "fluctuated all day at or below the minimums" and that the Makkovik station "did not report weather through the night."
- At 10:00am, CBC reports that the Woodward helicopter arrives at the scene but had to return after 30 minutes due to engine problems. CBC and Environment Canada reports the weather as snowing, visibility 4km and -5C. DND did not include this in their timeline.
- At 10:48am, CBC and DND report that a Universal Helicopter (Bell 206) leaves Goose Bay and reaches Makkovik by 12:00pm. CBC and Environment Canada report that it was snowing, visibility of 6.4 km and -7C.
- At 5:18pm, JRCC closes the case for the first time.

Weather Analysis:

- Environment Canada reports confirm that Makkovik did not report through the night, however, the lowest visibility was reported at 1km at 8:00am. It was snowing throughout the day with wind speed between 0km/hr and 7km/hr from 6:00am to 10:00am.
- Between 9:00 and 10:00 am, visibility ranged from 1.6km to 4km.
- DND stated in a question posed by CBC that the weather was "marginal at best at the time of the call with a ceiling of 600ft and visibility of 1nm [1.85km]."

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- According to CBC, the DND report states that the Cormorants require at least a 300 feet ceiling and 0.5 mile [0.8 km] visibility.

Assets reported to be used in the search effort:

- Of note, the CBC and DND reports differ in the assets reported to be used and their availability on the morning of January 30, 2012.
- CBC reports that:
 - CH149 Cormorant search and rescue helicopter, Gander, Newfoundland - Three of the four are fit to fly, although in one of them the hoist that could be used to rescue someone from the air is broken. The fourth is in the shop undergoing maintenance.
 - CH149 Cormorant search and rescue helicopter, Greenwood, Nova Scotia - The Cormorant on 24-hour SAR standby is fit to fly.
 - CC130 Hercules search and rescue airplane, Greenwood - All three Hercules search and rescue airplanes based in Greenwood are out of service. A backup SAR Hercules in Trenton, Ontario, about 1,000 km away, is fit to fly.
 - CH146 Griffon helicopter, Goose Bay, Labrador - Two are based in Goose Bay. One is in heavy maintenance. A pre-flight inspection of the second Griffon shows three oil lines are leaking and that the helicopter is out of service.
 - Woodward and Universal helicopters - Used in the morning search.
- DND reports that:
 - Primary SAR Assets
 - CH149 Cormorant (Gander) - Serviceable.
 - CH149 Cormorant (Greenwood) - Serviceable.
 - CC130 Hercules (Greenwood) - Unserviceable, however SAR backup available from Trenton was serviceable.
 - Secondary SAR Assets
 - CH146 Griffon (Goose Bay) - one in heavy maintenance, one found to be unserviceable after pre-flight inspection.
 - CP140 Aurora (Greenwood) - Serviceable.
 - CH149 Cormorants in Gander and Greenwood - maintaining primary maritime SAR posture.
 - CC130 in Greenwood - unserviceable.
 - Universal helicopters - Used in the morning search.

Conclusions:

- Based on information checked against Environment Canada records, CBC has reported the weather conditions accurately.
- At the time of the call, the weather appears to be within the limits as prescribed by DND. It would appear that other factors may have contributed to DND's decision not to deploy the Cormorants.
- The DND report does not include the number of Cormorants that were available in the morning and does not include the inclusion of the Woodward helicopter in the search and rescue effort. Of note, the pilot of the Woodward helicopter noted that the weather was marginal but she was still able to fly.

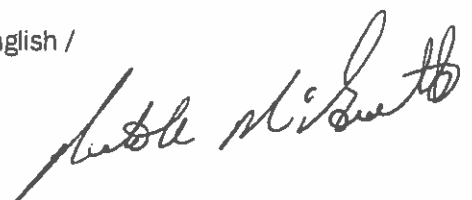
Action Being Taken:

- IGAAS will continue to monitor the situation as any new information is presented.

Prepared / Approved by: Colin Corcoran in consultation with Tracy English /

Ministerial Approval: Minister McGrath

March 27, 2012



Intergovernmental and Aboriginal Affairs
 Search and Rescue Timeline Analysis
 Colin Corcoran, Senior Analyst
 27-Mar-12

| Timeline | | Key Events as reported by: | | Weather as reported by: | |
|----------|----------|---|--|-------------------------------------|---|
| Date | Time | DND | CBC | DND Report | CBC Report / EC - Makkovik |
| Jan-29 | 13:30:00 | Burton last seen at Grandmothers house | Burton drops off his cousin Willy Flowers at their grandparents' house in Makkovik | | Snowing, -11 |
| | 17:00:00 | | <i>Note: This was the last reported weather for Makkovik</i> | | Snow, visibility 9.7km, -8.7C |
| | 19:00:00 | Missing report filed to RCMP | Rodney (father) upon getting a call from the grandmother, went looking around town for Burton. They did not find him. Burton's family calls local RCMP to report him missing | | |
| | 19:30:00 | RCMP initiate ground search | Cpl. Vardy (RCMP) calls Community Constable Anderson (also the community SAR coordinator) to say Burton is missing. He goes to the office to start organizing a search with over 50 people | | |
| | later? | | Anderson calls the Canadian Rangers at L Division Land Forces in St. John's to say a Junior Ranger is gone missing | | |
| | 22:10:00 | | Cpl. Vardy calls Sgt. Youden at RCMP Support Services in St. John's to say Burton has gone missing and discuss possible air support for dawn. Nothing is finalized | | |
| | 22:45:00 | | Local comes to office to say he saw fresh snowmobile tracks heading out to Makkovik Bay at around 2pm. Six searchers head out to see if they can follow | | |
| Jan-30 | 02:00:00 | Initial search suspended | Ice is dangerously thin and searchers are forced to abandon their search. They return to the office to set up a plan for morning | | |
| | 02:30:00 | | | | |
| | 06:45:00 | | Sgt. Youden calls Cpl. Vardy to get update. Vardy tells him that after they last spoke the ground crew found tracks leading to the ice but could not follow because it was too dangerous | | |
| | 07:00:00 | Search resumes in local community | Ground SAR resumes. | | Snowing heavily, Snow visibility 1.6km, -5.4 6 |
| | 08:00:00 | | Sgt. Youden leaves a message for FES-NL, which is in charge of dispatching privately-owned aircraft for SAR cases | | Snow, visibility 1.0km, -5.5 |
| | 08:40:00 | | Sgt. Youden speaks with Fred Hollett (FES-NL). Provincial Gov Air Services calls Universal Helicopters in Goose Bay to request a search helicopter. Crew alerted but decide to wait after a weather check | | Snow and "low ceilings" |
| | 09:00:00 | | Weather check | | Visibility 1.6 km, Snow visibility cloud ceiling is 1.6km, -5.3 600 ft, -6 |
| | 09:12:00 | JRCC received 1st call from FES-NL | FES-NL calls JRCC to ask for help searching for Burton | | |
| | 09:13:00 | | JRCC coordinator discusses request with the officer in charge, who decides that because there is no serviceable Herc in the region, he will only commit 443 Squad in Goose Bay to search. They have two Griffon helicopters which are used for training and "humanitarian" SAR | | |
| | 09:19:00 | | JRCC coordinator calls CF Goose Bay. They report they are SAR ready | | |
| | 09:24:00 | Significant Incident Report filed by 5 Canadian Ranger Patrol Group (CRPG) to LFAA HQ into CFICCC indicating teenager reported missing. 5 CRPG indicated as involved in search with RCMP (9:35am - 10 rangers and 2 HQ staff). Weather is hampering the ground search | | Weather hampering the ground search | |
| | 09:28:00 | | JRCC coordinator speaks to Captain Dan Gillis (Flight Commander) in Goose Bay, who says the Griffons are unserviceable but that he will call when he gets to the squadron | | |
| | 09:30:00 | | SAR coordinator discusses weather and aircraft status with the officer in charge. He does not want to commit resources other than the Griffons and they are unserviceable. The Griffons are found to have three leaking oil lines. Meanwhile, the pilot of a Woodward Aviation helicopter in Postville, 42km southwest of Makkovik, decides it is safe enough to fly and heads out to search. Weather is marginal but pilot says she can still search. | | Weather is marginal but improving and still able to search |

| | | | | | |
|--------|-----------|---|--|----------------------|---|
| | 09:33:00 | JRCC advised FES-NL weather was not suitable at Makkovik and to call back when it improved. Hourly weather reports indicated weather fluctuated all day at or below minimums. Makkovik weather station did not report weather through the night. NOTE: Report only gives status of one Cormorant in Gander as serviceable | JRCC coordinator tells FES-NL that based on weather and aircraft status, it "cannot support" the search at this time. They may be able to if required and aircraft/weather situations improve. Anderson was informed by Cpl. Vardy that nothing was available and the ground search continued. | Weather not suitable | |
| | 10:00:00 | | Woodward's helicopter arrives on scene to search. After 30 minutes the private helicopter has to land due to engine problems. | | Snowing. Snow, visibility 4 km, -5.4 0km, -5.1 |
| | 10:52:00 | | 444 Squad calls the JRCC to say the Griffons will be unserviceable until 2pm. | | |
| | 10:58:00 | The 1st Universal helicopter (Bell 206) departs from Goose Bay for Makkovik. | A Universal Helicopter leaves Goose Bay to join the search. Universal President indicates that once they get the call, "the decision is already made to send the aircraft." However, CBC notes they lack the equipment and trained spotters. Care would have been minimal. | | |
| | 12:00:00 | The 1st helicopter arrives at scene to assist. | The Universal helicopter arrives in the area where searchers are looking for Burton. It discovers snowmobile tracks and follows them until they end at about 20 meters of open water. It searches for another 30 minutes but finds nothing. | | Snowing, Snow, visibility 6.4 km, -6.4 km, -7.3 7 |
| | 13:45:00 | 2nd Universal helicopter departs for Makkovik. CF not called to assist. | | | |
| | 14:00:00 | | Local searchers decide to search underwater and release the Universal Helicopter. | | Snow, visibility 4.0 km, -7.7 |
| | 15:00:00 | | RCMP calls FES-NL to say it has released the Universal Helicopter and believes air support no longer required. | | Snow, visibility 4.8 km, -7.7 |
| | Afternoon | | Speedboat arrives and searchers drag the bottom of the bay with hooks and anchors believing they will find Burton in the hole under the ice. | | |
| | 17:18:00 | JRCC closes the case. | JRCC closes its file. | | |
| Jan-31 | 06:00:00 | Hourly weather reports commence. | | Weather not suitable | Snow, visibility 2.4 km, -14.7 |
| | 07:00:00 | FES-NL did not call to request CF support. | | Weather acceptable | Snow, visibility 4.8 km, -16.5 |
| | 09:32:00 | RCMP change status from search to recovery. | | | |
| | Morning | | RCMP requests a special camera from the Underwater Recovery Team in Deer Lake. An RCMP plane arrives in Makkovik to deliver the underwater camera. | | Mainly clear, visibility 24.1 km, -18.3 |
| | Afternoon | | The RCMP plane conducts a search of the area and finds the snowmobile stuck in some ice that has buckled, about 2.5 km from open water and 11.5 km east-north-east of Makkovik. CBC reports it was "further than they considered." | | Mainly clear, visibility 24.1 km, -18.3 |
| | 15:39:00 | RJOCA W/O receives report snowmobile found on ice flow inaccessible by SAR. | | | |
| | 16:34:00 | S CRPG calls RJOCA to get assistance in securing aircraft. RJOCA calls JRCC to request procedure for requesting aircraft. Procedure explained. No request is made. JRCC re-opens case and checks on Griffon serviceability in Goose Bay. | | | |
| | 16:43:00 | | L Forces Northern Division in St. John's calls the JRCC in Halifax to ask how to arrange helicopter support for Burton. | | |
| | 16:45:00 | | The JRCC reopens its file on Burton Winters. | | |
| | 16:46:00 | | JRCC calls CF Goose Bay to ask if its Griffon helicopters are back in service. | | |
| | 16:54:00 | FES-NL calls JRCC to request support. As the civilian plan could not search at night, CF support requested. CF commences SAR response. Hercules and Griffon still unserviceable, etc for Griffon at 1800hrs. | FES-NL calls JRCC asking for air support to search the area where Burton's snowmobile was found. | Weather suitable | Mainly clear, visibility 24.1 km, -18.3 |
| | 17:33:00 | Griffon from Goose tasked to assist. Cormorant not tasked as it has a primary response to overwater events. | JRCC assigns a Griffon and SAR crew to join the search. | | Sky mainly clear, visibility 24 km |
| | 19:38:00 | Griffon airborne after 2 hrs and 5 minutes. | Griffon leaves the base in Goose Bay. | | |
| | | <i>Note: There are additional items in the timeline, however, they are not related to weather</i> | | | |

FEB. 9. 2012 1:20PM NL WEATHER OFFICE

NO. 265 P. 5

File.
MATROVIAK

Weather from Goose Bay:

**Generally cloudy with light snow flurries and light west to southwest winds.
Visibilities 6 to 8 statute miles at first and 12 SM or greater by mid morning.**

First Following data from Monday January 30 2012

METAR CYYR 300900Z 26007KT 6SM -SHSN SCT023 OVC052 M14/M18 A2946 RMK SC3SC5 SLP983
56002 SKYXX=
METAR CYYR 301000Z 27004KT 8SM -SHSN OVC042 M15/M19 A2946 RMK SC8 SLP982 SKYXX=
METAR CYYR 301100Z 22005KT 8SM -SHSN BKN042 OVC210 M15/M18 A2946 RMK SC6CI0 SLP983
SKY8X=
SPECI CYYR 301157Z 22006KT 12SM FEW042 BKN210 RMK SC1CI0 SKY19=
METAR CYYR 301200Z 22006KT 12SM FEW042 BKN210 M15/M19 A2947 RMK SC1CI0 SLP986 53003
SKY19=
METAR CYYR 301300Z 21008KT 15SM BKN110 BKN210 M15/M18 A2948 RMK AC3CI0 SLP990 SKY49=
METAR CYYR 301400Z 23007KT 15SM SCT041 BKN084 OVC210 M11/M15 A2949 RMK SC3AC3CI0
SLP991 SKY8X=
SPECI CYYR 301416Z 24010KT 12SM -SHSN BKN042 OVC084 RMK SC6AC2 SKY9X=
METAR CYYR 301500Z 25016KT 15SM -SHSN SCT042 BKN084 OVC210 M10/M14 A2950 RMK
SC3AC1CI0 SLP993 51008
SKY5X=
SPECI CYYR 301535Z 25011G16KT 15SM DRSN FEW042 SCT084 OVC210 RMK SC2AC1CS0 SKY3X=
METAR CYYR 301600Z 25010KT 15SM DRSN FEW042 FEW084 OVC210 M10/M13 A2950 RMK
SC1AC2CS0 HALO SLP994 SKY2X=
METAR CYYR 301700Z 25018KT 15SM DRSN FEW021 SCT044 OVC210 M09/M13 A2951 RMK
SC1SC2CS0 HALO SH DIST SW-N
SLP997 SKY3X=
METAR CYYR 301800Z 26016G26KT 15SM DRSN FEW022 SCT042 OVC210 M10/M14 A2952 RMK
SC1SC2CS0 HALO SH DIST
SW-N SLP002 52009 SKY3X=
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SC1SC6CS0 SLP007 SKY89=
METAR CYYR 302000Z 26017G26KT 15SM DRSN SCT056 OVC220 M12/M15 A2956 RMK SC2CI0
SLP016 SKY3X=
METAR CYYR 302100Z 26016G22KT 15SM DRSN SCT045 BKN120 OVC220 M12/M16 A2959 RMK
SC3AC2CI0 SLP024 51021
SKY6X=
METAR CYYR 302200Z 27019G27KT 15SM DRSN SCT054 BKN120 OVC220 M13/M17 A2960 RMK
SC3AC2CI0 SLP030 SKY6X=
METAR CYYR 302300Z 27015G21KT 15SM DRSN FEW055 SCT120 BKN220 M14/M17 A2962 RMK
SC2AC2CI0 SLP035 SKY59=
SPECI CYYR 302305Z 27017KT 12SM -SHSN DRSN FEW055 SCT120 BKN220 RMK SC2AC2CI0
SKY59=

FEB. 9. 2012 1:21PM NL WEATHER OFFICE

NO. 265 P. 6

Weather from Makovik (always only available from 10Z to 21Z):**5 cm of snow had fallen during the previous night.****Monday weather generally cloudy with snowflurries. Winds light and variable at first and light to moderate southwesterly in the afternoon.****Visibilities 5/8 to 1 statute miles at first and after mid morning generally 2 to 4 SM. Low ceilings throughout the day between 5 and 9 hundred feet above ground level (AGL).**

Following data from Sunday January 29 2012

METAR CYFT 292100Z 13005KT 6SM -SN OVC006 M09/M11 A2963 RMK ST8 LAST OB/NXT301000
SLP039 56023 SKYXX=

Following data from Monday January 30 2012

METAR CYFT 301000Z CCA 00000KT 1SM -SN OVC006 M06/M07 A2942 RMK SC8 /S05/ AFT 2100
SLP970 SKYXX=

METAR CYFT 301100Z 00000KT 1SM -SN OVC006 M05/M06 A2942 RMK SC8 SLP968 SKYXX=

METAR CYFT 301200Z 00000KT 5/8SM -SN OVC005 M05/M06 A2942 RMK SC8 SLP968 57005 SKYXX=

METAR CYFT 301300Z 11004KT 1SM -SN OVC006 M05/M06 A2941 RMK SC7 SLP967 SKY9X=

SPECI CYFT 301352Z 00000KT 2 1/2SM -SN OVC008 RMK SC7 SKY9X=

METAR CYFT 301400Z 00000KT 2 1/2SM -SN OVC008 M05/M06 A2941 RMK SC7 SLP966 SKY9X=

METAR CYFT 301500Z 22005KT 4SM -SN OVC008 M06/M07 A2941 RMK SC8 /S01/ SLP967 50001
SKYXX=

METAR CYFT 301600Z 23005KT 4SM -SN OVC009 M07/M09 A2941 RMK SC8 SLP967 SKYXX=

METAR CYFT 301700Z 23009KT 3SM -SN OVC008 M08/M09 A2941 RMK SC8 SLP966 SKYXX=

METAR CYFT 301800Z CCA 24008KT 2 1/2SM -SN OVC007 M08/M09 A2941 RMK SC8 /S01/ SLP967
55000 SKYXX=

METAR CYFT 301900Z 23008KT 3SM -SN OVC009 M08/M09 A2943 RMK SC8 SLP972 SKYXX=

METAR CYFT 302000Z 23008KT 1SM -SN OVC008 M08/M09 A2944 RMK SC8 SLP976 SKYXX=

METAR CYFT 302100Z 24011KT 2SM -SN BKN007 M08/M09 A2946 RMK SC7 LAST OB/NXT311000
SLP982 52015 SKY99=**Weather from Cartwright:****3 cm of snow had fallen during the previous night.****Monday weather generally cloudy with snowflurries. Winds light and variable at first and light southwesterly in the afternoon.****Visibilities 2 ¼ to 4 statute miles at first and after mid morning generally 12 SM or more.****Ceilings as low as 1500 feet AGL in the early morning and above 5000 feet AGL after noon.**

Following data from Monday January 30 2012

METAR CWCA 300900Z 00000KT 3SM -SN OVC015 M05/M05 A2943 RMK SC8 SLP968 58005 SKYXX=

METAR CWCA 301000Z 00000KT 2 1/4SM -SN OVC018 M05/M06 A2943 RMK SC8 SLP966 SKYXX=

SPECI CWCA 301024Z 20003KT 2 1/4SM -SN OVC018 RMK SN4SC4 SKYXX=

METAR CWCA 301100Z 22003KT 4SM -SN FEW018 BKN070 M06/M07 A2942 RMK SC2AC5 SLP965
SKY89=

FEB. 9. 2012 1:21PM NL WEATHER OFFICE

NO. 265 P. 7

SPECI CWCA 301141Z 21003KT 9SM FEW006 FEW018 OVC070 RMK ST1SC1AC6 TR ST SKY9X=
METAR CWCA 301200Z 00000KT 12SM FEW008 FEW018 OVC050 M07/M08 A2943 RMK ST1SC1SC6
TR ST /S02/ SLP967

55001 SKY9X=

METAR CWCA 301300Z 22005KT 12SM FEW018 OVC050 M07/M08 A2944 RMK SC1SC7 SLP970
SKYXX=

SPECI CWCA 301312Z 22005KT 8SM -SN FEW018 OVC050 RMK SC1SC7 SKYXX=

METAR CWCA 301400Z 24004KT 12SM -SN BKN030 OVC050 M07/M09 A2944 RMK SC6SC2 SLP971
SKYXX=

SPECI CWCA 301434Z 23006KT 15SM FEW025 BKN200 RMK SC2C15 SKY89=

METAR CWCA 301500Z 22003KT 15SM FEW030 BKN200 M09/M10 A2945 RMK SC2CS4 SLP973 52006
SKY79=

SPECI CWCA 301542Z 23005KT 12SM -SN FEW030 OVC200 RMK SC2CS6 SKYXX=

METAR CWCA 301600Z 22003KT 12SM -SN FEW030 BKN070 OVC200 M07/M08 A2944 RMK
SC2AS5CS2 SLP972 SKYXX=

METAR CWCA 301700Z 23003KT 15SM -SN FEW020 SCT070 BKN200 M06/M08 A2944 RMK
CU1AS2CS3 TR CU SLP970 SKY79=

METAR CWCA 301800Z 23003KT 15SM BKN020 M06/M07 A2944 RMK SC7 SLP972 55001 SKY99=

METAR CWCA 301900Z 24003KT 15SM -SN OVC025 M05/M07 A2945 RMK SC8 SLP975 SKYXX=

METAR CWCA 302000Z 00000KT 15SM -SN OVC025 M06/M08 A2947 RMK SC8 SLP980 SKYXX=

SPECI CWCA 302045Z 24003KT 2SM -SN OVC025 RMK SC8 SKYXX=

METAR CWCA 302100Z 24007KT 3SM -SN OVC025 M06/M08 A2948 RMK SC8 SLP984 52012 SKYXX=

METAR CWCA 302200Z 26009KT 4SM -SN FEW025 OVC040 M07/M09 A2950 RMK SC2SC5 SLP990
SKY9X=

METAR CWCA 302300Z 23007KT 6SM -SN SCT020 OVC040 M09/M11 A2951 RMK SC3SC4 SLP995
SKY9X=

FEB. 9. 2012 1:21PM NL WEATHER OFFICE

NO. 265 P. 8

Weather from Gander:

Generally clear skies and good visibility until about 5 p.m then cloudy with brief flurries and visibilities 2 1/2 to 6 SM. Moderate to strong west to southwest winds.

Following data from Monday January 30 2012

METAR CYQX 300900Z 24018G25KT 15SM FEW026 FEW036 FEW170 M04/M07 A2964 RMK SC1SC1AC1 SLP047 53013 SKY33=
METAR CYQX 301000Z 24016G22KT 15SM FEW028 FEW170 M04/M07 A2965 RMK SC1AC1 SLP050 SKY22=
METAR CYQX 301100Z 24017G22KT 20SM FEW028 FEW260 M05/M08 A2967 RMK SC1CI1 SLP054 SKY22=
METAR CYQX 301200Z 23017G26KT 20SM FEW028 FEW260 M05/M08 A2969 RMK SC1CI1 TR CI SLP063 53015 SKY11=
METAR CYQX 301300Z 24014G26KT 20SM FEW028 FEW260 M04/M08 A2971 RMK SC1CI1 TR CI SLP069 SKY11=
METAR CYQX 301400Z 24019G28KT 20SM FEW028 FEW260 M03/M08 A2972 RMK SC1CI1 TR CI SLP073 SKY11=
METAR CYQX 301500Z 25016G25KT 20SM FEW033 M02/M08 A2974 RMK CU2 SLP079 52016 SKY33=
SPECI CYQX 301547Z 25019G26KT 15SM -SHSN FEW031 BKN046 M03/ RMK CU2SC4 SKY88=
METAR CYQX 301600Z 25018G27KT 15SM -SHSN FEW031 BKN045 M02/M08 A2973 RMK CU2SC3 SLP078 SKY77=
SPECI CYQX 301640Z 26017G28KT 20SM FEW030 SCT045 M01/ RMK CU2SC2 SKY44=
METAR CYQX 301700Z 25013G23KT 20SM FEW030 SCT045 M02/M08 A2973 RMK CU2SC2 SLP075 SKY55=
METAR CYQX 301800Z 24016G24KT 20SM FEW030 SCT045 M01/M08 A2972 RMK CU2SC2 SLP073 57005 SKY44=
SPECI CYQX 301813Z 25015G22KT 15SM -SHSN SCT027 BKN045 M02/ RMK SC3SC2 SKY77=
METAR CYQX 301900Z 25008G16KT 15SM FEW029 SCT047 M02/M07 A2973 RMK SC2SC1 SH DIST W SLP075 SKY44=
SPECI CYQX 301928Z 25010G16KT 15SM -SHSN FEW031 BKN047 BKN075 M02/ RMK SC2SC2AC1 SKY77=
METAR CYQX 302000Z 25014KT 15SM -SHSN FEW018 FEW031 BKN048 BKN075 M03/M07 A2973 RMK SC1SC2SC2AC1 SLP077 SKY77=
SPECI CYQX 302036Z 25017G23KT 2 1/2SM -SHSN DRSN SCT005 BKN018 BKN038 BKN075 M03/ RMK SN2SF2SC2SC2AC1 SKY99=
SPECI CYQX 302050Z 25013G21KT 3SM -SHSN FEW005 FEW018 BKN036 BKN075 M03/ RMK SF1SC2SC4AC1 SKY99=
METAR CYQX 302100Z 24014KT 6SM -SHSN FEW005 FEW018 BKN033 BKN075 M03/M06 A2975 RMK SF1SC2SC4AC1 SLP082 52008 SKY99=
SPECI CYQX 302130Z 23009KT 20SM FEW008 FEW029 FEW070 SCT260 M04/ RMK SF1SC1AC1CI1 SKY44=
METAR CYQX 302200Z 21009KT 20SM FEW029 SCT040 SCT070 M04/M06 A2975 RMK SC1SC2AC1 SLP082 SKY55=
METAR CYQX 302300Z 21012G17KT 20SM FEW028 BKN038 M04/M07 A2976 RMK SC1SC4 SLP085 SKY66=

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NO. 283

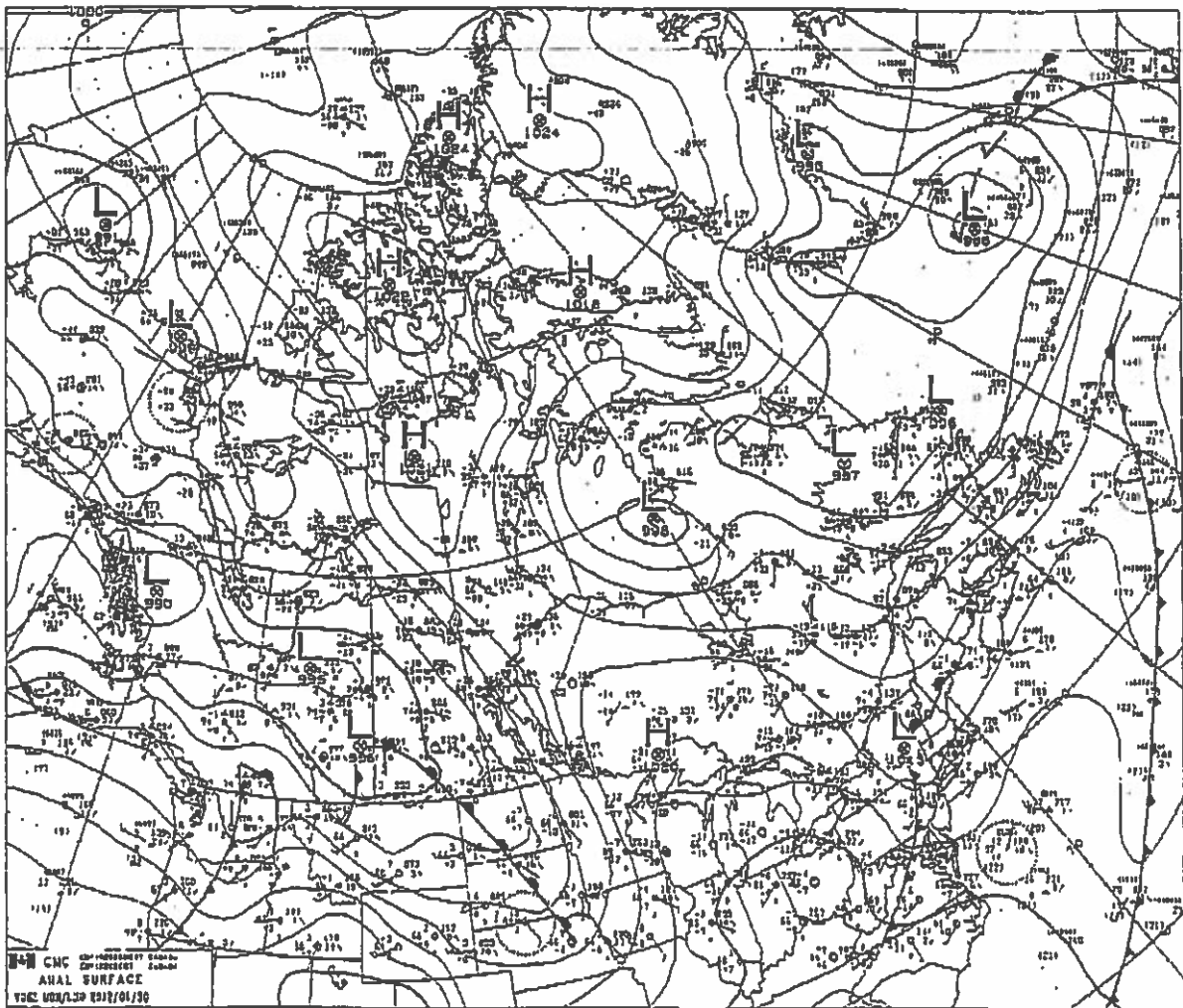
P. 2

Broad troughing over Labrador giving cloudy conditions, flurries and light winds over eastern and northern areas. By afternoon winds had become moderate to strong westerly inland and light to moderate southwesterly along the coast.

Surface analyses for 06Z, 12Z, & 18Z January 30th

Labrador standard time (AST) = UTC time - 4 hours, e.g. 06Z = 2:00 a.m. AST

Newfoundland Standard Time (NST) = UTC time - 3.5 hours, e.g. 06Z = 2:30 a.m. NST

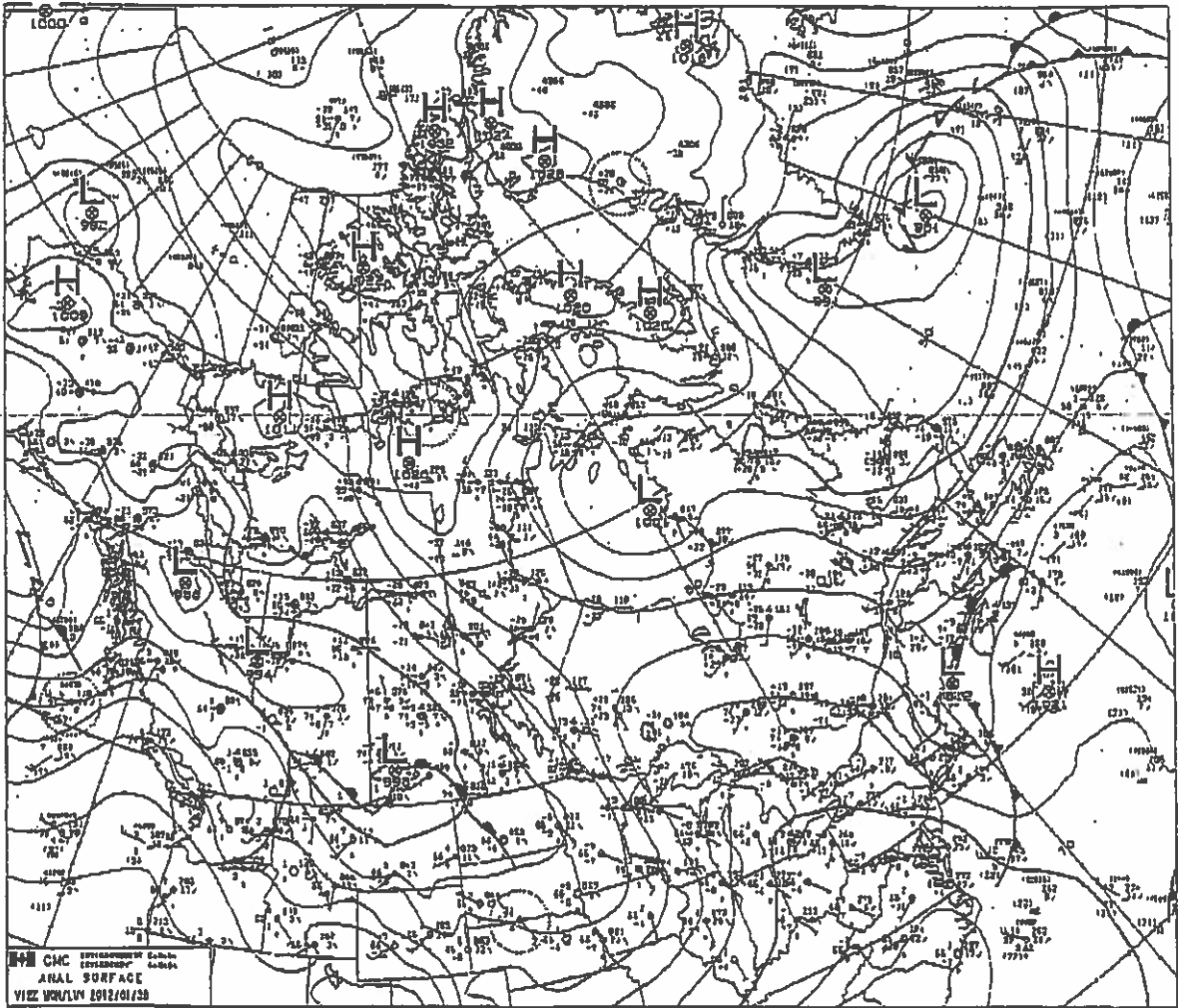


APR. 10. 2012 2:21PM

NL WEATHER OFFICE

NO. 283

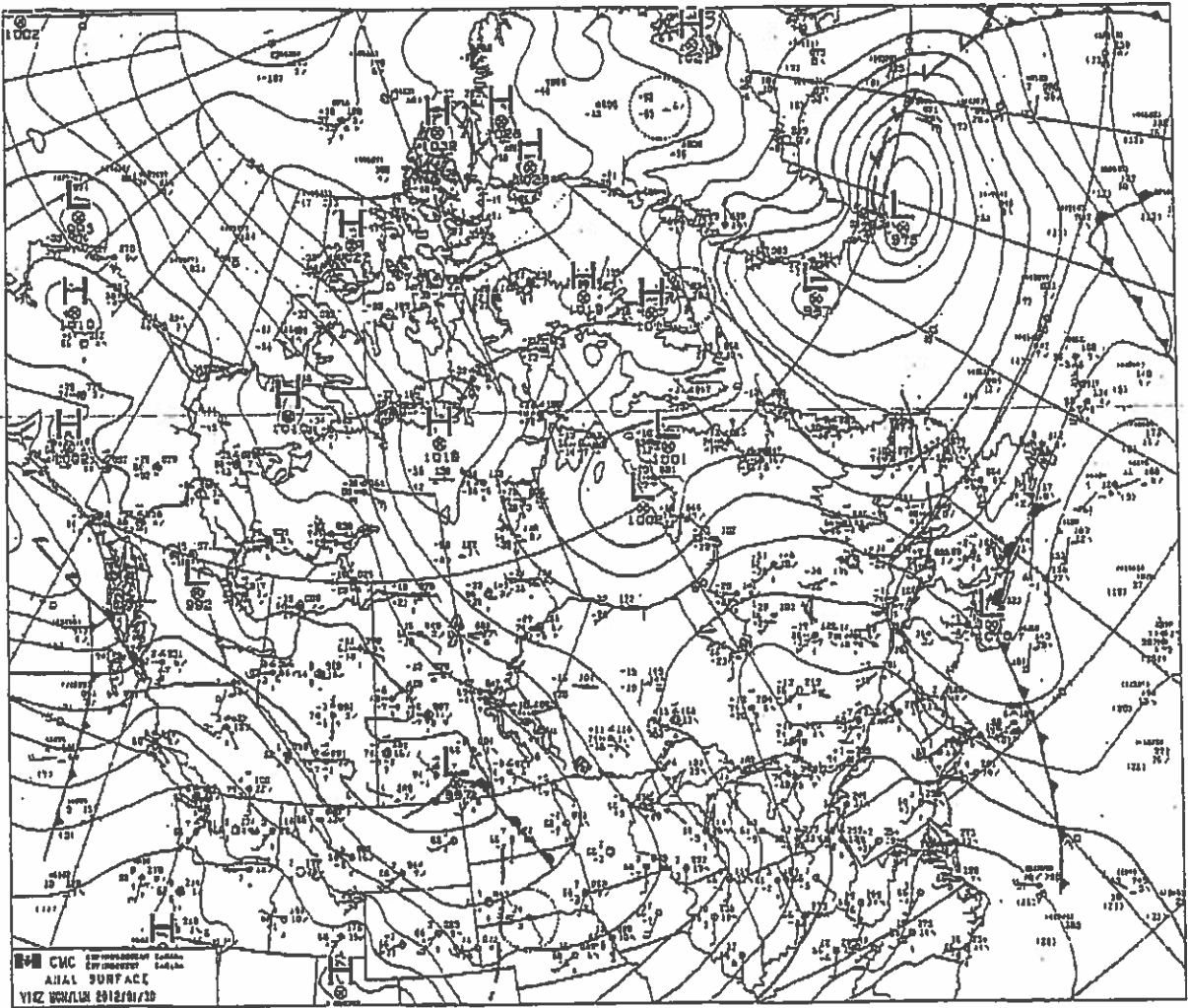
P. 3



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NO. 283 P. 4



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NO. 283 P. 5

Weather from Goose Bay:**Generally cloudy with light snow flurries and light west to southwest winds.
Visibilities 6 to 8 statute miles at first and 12 SM or greater by mid morning.**

First Following data from Monday January 30 2012

METAR CYYR 300900Z 26007KT 6SM -SHSN SCT023 OVC052 M14/M18 A2946 RMK SC3SC5 SLP983
56002 SKYXX=
METAR CYYR 301000Z 27004KT 8SM -SHSN OVC042 M15/M19 A2946 RMK SC8 SLP982 SKYXX=
METAR CYYR 301100Z 22005KT 8SM -SHSN BKN042 OVC210 M15/M18 A2946 RMK SC6C10 SLP983
SKY8X=
SPECT CYYR 301157Z 22006KT 12SM FEW042 BKN210 RMK SC1C10 SKY19=
METAR CYYR 301200Z 22006KT 12SM FEW042 BKN210 M15/M19 A2947 RMK SC1C10 SLP986 53003
SKY19=
METAR CYYR 301300Z 21008KT 15SM BKN110 BKN210 M15/M18 A2948 RMK AC3C10 SLP990 SKY49=
METAR CYYR 301400Z 23007KT 15SM SCT041 BKN084 OVC210 M11/M15 A2949 RMK SC3AC3C10
SLP991 SKY8X=
SPECI CYYR 301418Z 24010KT 12SM -SHSN BKN042 OVC084 RMK SC6AC2 SKY9X=
METAR CYYR 301500Z 25016KT 15SM -SHSN SCT042 BKN084 OVC210 M10/M14 A2950 RMK
SC3AC1C10 SLP993 51008
SKY5X=
SPECI CYYR 301535Z 25011G16KT 15SM DRSN FEW042 SCT084 OVC210 RMK SC2AC1CS0 SKY3X=
METAR CYYR 301600Z 25010KT 15SM DRSN FEW042 FEW084 OVC210 M10/M13 A2950 RMK
SC1AC2CS0 HALO SLP994 SKY2X=
METAR CYYR 301700Z 25018KT 15SM DRSN FEW021 SCT044 OVC210 M09/M13 A2951 RMK
SC1SC2CS0 HALO SH DIST SW-N
SLP997 SKY3X=
METAR CYYR 301800Z 26016G26KT 15SM DRSN FEW022 SCT042 OVC210 M10/M14 A2952 RMK
SC1SC2CS0 HALO SH DIST
SW-N SLP002 52009 SKY3X=
METAR CYYR 301900Z 26023G28KT 15SM DRSN FEW022 BKN046 BKN210 M11/M15 A2954 RMK
SC1SC6CS0 SLP007 SKY89=
METAR CYYR 302000Z 26017G26KT 15SM DRSN SCT056 OVC220 M12/M15 A2956 RMK SC2C10
SLP016 SKY3X=
METAR CYYR 302100Z 26016G22KT 15SM DRSN SCT045 BKN120 OVC220 M12/M16 A2959 RMK
SC3AC2C10 SLP024 51021
SKY6X=
METAR CYYR 302200Z 27019G27KT 15SM DRSN SCT054 BKN120 OVC220 M13/M17 A2960 RMK
SC3AC2C10 SLP030 SKY6X=
METAR CYYR 302300Z 27015G21KT 15SM DRSN FEW055 SCT120 BKN220 M14/M17 A2962 RMK
SC2AC2C10 SLP035 SKY59=
SPECI CYYR 302305Z 27017KT 12SM -SHSN DRSN FEW055 SCT120 BKN220 RMK SC2AC2C10
SKY59=

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NO. 283 P. 6

Weather from Makovik (always only available from 10Z to 21Z):**5 cm of snow had fallen during the previous night.****Monday weather generally cloudy with snowflurries. Winds light and variable at first and light to moderate southwesterly in the afternoon.****Visibilities 5/8 to 1 statute miles at first and after mid morning generally 2 to 4 SM. Low ceilings throughout the day between 5 and 9 hundred feet above ground level (AGL).**

Following data from Sunday January 29 2012

METAR CYFT 292100Z 13005KT 6SM -SN OVC006 M09/M11 A2963 RMK ST8 LAST OB/NXT301000
SLP039 56023 SKYXX=

Following data from Monday January 30 2012

METAR CYFT 301000Z CCA 00000KT 1SM -SN OVC006 M06/M07 A2942 RMK SC8 /S05/ AFT 2100
SLP970 SKYXX=

METAR CYFT 301100Z 00000KT 1SM -SN OVC006 M05/M06 A2942 RMK SC8 SLP968 SKYXX=

METAR CYFT 301200Z 00000KT 5/8SM -SN OVC005 M05/M06 A2942 RMK SC8 SLP968 57005 SKYXX=

METAR CYFT 301300Z 11004KT 1SM -SN OVC006 M05/M06 A2941 RMK SC7 SLP967 SKY9X=

SPECI CYFT 301352Z 00000KT 2 1/2SM -SN OVC008 RMK SC7 SKY9X=

METAR CYFT 301400Z 00000KT 2 1/2SM -SN OVC008 M05/M06 A2941 RMK SC7 SLP966 SKY9X=

METAR CYFT 301500Z 22005KT 4SM -SN OVC008 M06/M07 A2941 RMK SC8 /S01/ SLP967 50001
SKYXX=

METAR CYFT 301600Z 23005KT 4SM -SN OVC009 M07/M09 A2941 RMK SC8 SLP967 SKYXX=

METAR CYFT 301700Z 23009KT 3SM -SN OVC008 M08/M09 A2941 RMK SC8 SLP966 SKYXX=

METAR CYFT 301800Z CCA 24008KT 2 1/2SM -SN OVC007 M08/M09 A2941 RMK SC8 /S01/ SLP967
55000 SKYXX=

METAR CYFT 301900Z 23008KT 3SM -SN OVC009 M08/M09 A2943 RMK SC8 SLP972 SKYXX=

METAR CYFT 302000Z 23008KT 1SM -SN OVC006 M08/M09 A2944 RMK SC8 SLP976 SKYXX=

METAR CYFT 302100Z 24011KT 2SM -SN BKN007 M08/M09 A2946 RMK SC7 LAST OB/NXT311000
SLP982 52015 SKY99=

Weather from Cartwright:**3 cm of snow had fallen during the previous night.****Monday weather generally cloudy with snowflurries. Winds light and variable at first and light southwesterly in the afternoon.****Visibilities 2 ¼ to 4 statute miles at first and after mid morning generally 12 SM or more.****Ceilings as low as 1500 feet AGL in the early morning and above 5000 feet AGL after noon.**

Following data from Monday January 30 2012

METAR CWCA 300900Z 00000KT 3SM -SN OVC015 M05/M05 A2943 RMK SC8 SLP968 58005 SKYXX=

METAR CWCA 301000Z 00000KT 2 1/4SM -SN OVC018 M05/M06 A2943 RMK SC8 SLP966 SKYXX=

SPECI CWCA 301024Z 20003KT 2 1/4SM -SN OVC018 RMK SN4SC4 SKYXX=

METAR CWCA 301100Z 22003KT 4SM -SN FEW018 BKN070 M06/M07 A2942 RMK SC2AC5 SLP965
SKY89=

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SPECI CWCA 301141Z 21003KT 9SM FEW006 FEW016 OVC070 RMK ST1SC1AC6 TR ST SKY9X=
METAR CWCA 301200Z 00000KT 12SM FEW008 FEW018 OVC050 M07/M08 A2943 RMK ST1SC1SC6
TR ST /S02/ SLP967
55001 SKY9X=
METAR CWCA 301300Z 22005KT 12SM FEW018 OVC050 M07/M08 A2944 RMK SC1SC7 SLP970
SKYXX=
SPECI CWCA 301312Z 22005KT 8SM -SN FEW018 OVC050 RMK SC1SC7 SKYXX=
METAR CWCA 301400Z 24004KT 12SM -SN BKN030 OVC050 M07/M09 A2944 RMK SC6SC2 SLP971
SKYXX=
SPECI CWCA 301434Z 23006KT 15SM FEW025 BKN200 RMK SC2CI5 SKY89=
METAR CWCA 301500Z 22003KT 15SM FEW030 BKN200 M09/M10 A2945 RMK SC2CS4 SLP973 52006
SKY79=
SPECI CWCA 301542Z 23006KT 12SM -SN FEW030 OVC200 RMK SC2CS6 SKYXX=
METAR CWCA 301600Z 22003KT 12SM -SN FEW030 BKN070 OVC200 M07/M08 A2944 RMK
SC2AS5CS2 SLP972 SKYXX=
METAR CWCA 301700Z 23003KT 15SM -SN FEW020 SCT070 BKN200 M06/M08 A2944 RMK
CU1AS2CS3 TR CU SLP970 SKY79=
METAR CWCA 301800Z 23003KT 15SM BKN020 M06/M07 A2944 RMK SC7 SLP972 55001 SKY99=
METAR CWCA 301900Z 24003KT 15SM -SN OVC025 M05/M07 A2945 RMK SC8 SLP975 SKYXX=
METAR CWCA 302000Z 00000KT 15SM -SN OVC025 M06/M08 A2947 RMK SC8 SLP980 SKYXX=
SPECI CWCA 302045Z 24003KT 2SM -SN OVC025 RMK SC8 SKYXX=
METAR CWCA 302100Z 24007KT 3SM -SN OVC025 M06/M08 A2948 RMK SC8 SLP984 52012 SKYXX=
METAR CWCA 302200Z 26009KT 4SM -SN FEW025 OVC040 M07/M09 A2950 RMK SC2SC5 SLP990
SKY9X=
METAR CWCA 302300Z 23007KT 6SM -SN SCT020 OVC040 M09/M11 A2951 RMK SC3SC4 SLP995
SKY9X=

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NO. 283 P. 8

Weather from Gander:**Generally clear skies and good visibility until about 5 p.m then cloudy with brief flurries and visibilities 2 1/2 to 6 SM. Moderate to strong west to southwest winds.**

Following data from Monday January 30 2012

METAR CYQX 300900Z 24018G25KT 15SM FEW026 FEW036 FEW170 M04/M07 A2964 RMK SC1SC1AC1 SLP047 53013 SKY33=
METAR CYQX 301000Z 24016G22KT 15SM FEW028 FEW170 M04/M07 A2965 RMK SC1AC1 SLP050 SKY22=
METAR CYQX 301100Z 24017G22KT 20SM FEW028 FEW260 M05/M08 A2967 RMK SC1CI1 SLP054 SKY22=
~~METAR CYQX 301200Z 23017G26KT 20SM FEW028 FEW260 M05/M08 A2969 RMK SC1CI1 TR CI SLP063 53015 SKY11=~~
METAR CYQX 301300Z 24014G26KT 20SM FEW028 FEW260 M04/M08 A2971 RMK SC1CI1 TR CI SLP069 SKY11=
METAR CYQX 301400Z 24019G28KT 20SM FEW028 FEW260 M03/M08 A2972 RMK SC1CI1 TR CI SLP073 SKY11=
METAR CYQX 301500Z 25016G25KT 20SM FEW033 M02/M08 A2974 RMK CU2 SLP079 52016 SKY33=
SPECI CYQX 301547Z 25019G26KT 15SM -SHSN FEW031 BKN046 M03/ RMK CU2SC4 SKY88=
METAR CYQX 301600Z 25018G27KT 15SM -SHSN FEW031 BKN045 M02/M08 A2973 RMK CU2SC3 SLP078 SKY77=
SPECI CYQX 301640Z 26017G26KT 20SM FEW030 SCT045 M01/ RMK CU2SC2 SKY44=
METAR CYQX 301700Z 25013G23KT 20SM FEW030 SCT045 M02/M08 A2973 RMK CU2SC2 SLP075 SKY55=
METAR CYQX 301800Z 24016G24KT 20SM FEW030 SCT045 M01/M08 A2972 RMK CU2SC2 SLP073 57005 SKY44=
SPECI CYQX 301813Z 25015G22KT 15SM -SHSN SCT027 BKN045 M02/ RMK SC3SC2 SKY77=
METAR CYQX 301900Z 25008G16KT 15SM FEW029 SCT047 M02/M07 A2973 RMK SC2SC1 SH DIST W SLP075 SKY44=
SPECI CYQX 301928Z 25010G16KT 15SM -SHSN FEW031 BKN047 BKN075 M02/ RMK SC2SC2AC1 SKY77=
METAR CYQX 302000Z 25014KT 15SM -SHSN FEW018 FEW031 BKN048 BKN075 M03/M07 A2973 RMK SC1SC2SC2AC1 SLP077 SKY77=
SPECI CYQX 302036Z 25017G23KT 2 1/2SM -SHSN DRSN SCT005 BKN018 BKN038 BKN075 M03/ RMK SN2SF2SC2SC2AC1 SKY99=
SPECI CYQX 302050Z 25013G21KT 3SM -SHSN FEW005 FEW018 BKN036 BKN075 M03/ RMK SF1SC2SC4AC1 SKY99=
METAR CYQX 302100Z 24014KT 6SM -SHSN FEW005 FEW018 BKN033 BKN075 M03/M06 A2975 RMK SF1SC2SC4AC1 SLP082 52008 SKY99=
SPECI CYQX 302130Z 23009KT 20SM FEW008 FEW029 FEW070 SCT260 M04/ RMK SF1SC1AC1CI1 SKY44=
METAR CYQX 302200Z 21009KT 20SM FEW029 SCT040 SCT070 M04/M06 A2975 RMK SC1SC2AC1 SLP082 SKY55=
METAR CYQX 302300Z 21012G17KT 20SM FEW028 BKN038 M04/M07 A2976 RMK SC1SC4 SLP085 SKY66=