Optional Fast Pack for Quick Start Basic MEWS Observer Training

The Fast Pack contains the critical forms and reference tables / charts needed to participate in a Quick Start Basic MEWS Observer Training session. Quick Start Basic MEWS training is not a substitute for the comprehensive self-guided or mentored Basic MEWS training lessons series.

The goals of Quick Start Basic MEWS Observer Training are:

- Rapid training of EmComm hams to make and report weather observations in a disaster area immediately after a disaster;
- Increasing the value of EmComm hams by providing critical weather information to aid in relief response and management;
- Increasing the flight safety of emergency relief flight crews by providing weather reports relevant to VFR (visual flight rules) common to helicopter flight operations;
- Empowering EmComm hams to train other disaster survivors to assist in making weather observations. This enables survivors overcome the feeling of being "helpless victims" by making them active participants in meaningful relief work.

Instructions: Before coming to the training session:

- 1. Print out the contents of this packet and the MEWS Weather Observer Handbook. Bring them to the training session.
- 2. Download and view the MEWS Overview (Introductory) PDF slide presentation.
- 3. Bring a writing pad or notebook and pen / pencil with you.
- 4. Bring a recent photo of yourself (not larger than 4 x 6 or 3 ½ x 5 inches). You will be asked to put this in the MEWS Instructor's Training Log Book. You will also be asked to writing your name, callsign (if you have one) and make any comments in the remaining space. Please also take the instructor's name card and send an email to the instructor. This will assure the accurate recording of your email address.

			RTC-TH	M.E.W.S. Weath	ner Observation	Loa
	M.E.	W.s	Location			g
3	A	- A	Lat ° " I	N Long °	"Е	
Mobile	った	# # # # # # # # # # # # # # # # # # #		N Long	E Elev	m AMSL
1	30 Ilan	d Meather =	Date	1 0	ther Observations	
	genc	y Weat		Sunrise	Mid-Afternoon	Sunset
F	Ready to serve		Local time Hour→	Guinise	mid / itterificon	Guilloct
a	and sustain our		24-hr format			
	comn	nunity.	Observer (initial; see back)			
	2.1 Air (Dry bulb)		Thermometer in shade: 1.5	°C	°C	°C
ξ	2.2	Wet Bulb	m above ground	°C	°C	°C
j i i	2.3	Difference	Subtract 2.2 from 2.1;	°C	°C	°C
H a	2.4	Rel. Humidity	Use 2.1, 2.3; R H Table	%RH	%RH	%RH
ativ	2.5	Dew Point	Use 2.1, 2.3; Dew Pt Table	°C	°C	°C
/Re	2.0	DCW 1 OIII	Use 2.1, 2.4 ; HSI Table			
ure	2.6	Heat Stress	Danger Level (if any from	Heat Stress °C	Heat Stress °C	Heat Stress °C
Dera			Heat Stress Index table)	□ Ex Cautn □Ex Dangr	□ Ex Cautn □Ex Dangr	□ Ex Cautn □Ex Dangr
Temperature / Relative Humidity			Use 2.1, 3.1; Wind Chl Tbl	Wind Chill. °C	Wind Chill. °C	Wind Chill. °C
	2.7	Wind Chill	Danger Level (if any from	□TrvI Dngr □Frstbte10	aTrvl Dngr aFrstbte10	□TrvI Dngr □Frstbte10
2.			Wind Chill chart)	aTShltr Dgr aFrstite30 aFrostbite aFrstbte5	□TShltr Dgr □Frstite30 □Frostbite □Frstbte5	□TShltr Dgr □Frstite30 □Frostbite □Frstbte5
			Report wind spee	d in knots to air cre		
Wind Speed / Direction		Average	Get 3 readings & average			
				km/h knts	km/h knts	km/h knts
/ Dir	3.1	Gusts	Record highest gust	km/h knts	km/h knts	km/h knts
eed				elines for Helicop		
		10 km	ots / 18.5 km/h ideal; Ok	to fly		
9					bove 45 knots / 83 kr	
Wind		Gusts ab	ove 20 knots/ 37 km/h· l	No flights Max	tailwind 5 knots/ 6 k	m/hr: No take off
		Gusts about				
3. Wind	3.2	Gusts ab	ove 20 knots/ 37 km/h: Circle direction steady wind	No flights Max N NE S SW E SE W NW N NE S SW	tailwind 5 knots/ 6 k N NE S SW E SE W NW N NE S SW	m/hr: No take off N NE S SW E SE W NW N NE S SW
	3.2	Gusts about Steady Wind Direction	Ove 20 knots/ 37 km/h: Circle direction steady wind comes FROM	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW	tailwind 5 knots/ 6 k N NE S SW E SE W NW N NE S SW E SE W NW	m/hr: No take off N NE S SW E SE W NW N NE S SW E SE W NW
		Gusts about Steady Wind Direction Variable Wind Direction	Circle direction steady wind comes FROM Circle 1 or more directions	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear □ Cloudy	tailwind 5 knots/ 6 k N NE S SW E SE W NW N NE S SW E SE W NW Clear □ Cloudy	n/hr: No take off N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy
	3.2	Gusts about Steady Wind Direction Variable Wind	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW	tailwind 5 knots/ 6 k N NE S SW E SE W NW N NE S SW E SE W NW	m/hr: No take off N NE S SW E SE W NW N NE S SW E SE W NW
		Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local model	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (about 1975)	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Rroken ove mean sea level) and	N NE S SW E SE W NW N NE S SW E SE W NW O Clear Cloudy Scattered Overcast Rroken Ctailwind 5 knots/6 k	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Rroken
		Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local model Cloud Base Ht	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Rroken Overmean sea level) and Clouds above mtn	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Rroken Clouds above, at, o	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Roken Clouds above mtn
		Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local model	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (about 1975)	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Rroken ove mean sea level) and	N NE S SW E SE W NW N NE S SW E SE W NW O Clear Cloudy Scattered Overcast Rroken Ctailwind 5 knots/6 k	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Rroken
	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel)	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (ak Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Overcast Clouds above mtn Clouds at mtn top Clouds below mtn m AGL	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken report clouds above, at, o Clouds at mtn top Clouds below mtn m AGL	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Roken Clouds above mtn Clouds abow mtn Clouds below mtn MAGL
3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel)	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (ak Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Ove mean sea level) and Clouds above mtn Clouds at mtn top Clouds below mtn m AGL	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken report clouds above, at, o Clouds above mtn Clouds at mtn top Clouds below mtn m AGL GL: Low cloud ceiling =	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Clouds above mtn Clouds at mtn top Clouds below mtn m AGL
3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel)	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Ove mean sea level) and Clouds above mtn Clouds at mtn top Clouds below mtn m AGL MAGL: Night - 500 m A	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken report clouds above, at, o Clouds above mtn Clouds at mtn top Clouds below mtn m AGL CI: Low cloud ceiling =	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Clouds above mtn Clouds at mtn top Clouds below mtn m AGL No flights CUNim
3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel)	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8×1000m fin flight altitudes: Day = 160 High Middle Vertically	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Ove mean sea level) and Clouds above mtn Clouds at mtn top Clouds at mtn top Clouds below mtn m AGL MAGL: Night - 500 m A	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken report clouds above, at, o Clouds above mtn Clouds at mtn top Clouds at mtn top Clouds below mtn m AGL CI-row cloud ceiling = CI-row cloud ceiling = CUNim	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Clouds above mtn Clouds at mtn top Clouds above mtn Clouds at mtn top Clouds below mtn MAGL Altostrat Altocum CUNim
3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel)	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Rroken Over mean sea level) and Clouds above mtn Clouds at mtn top Clouds below mtn m AGL MAGL: Night - 500 m A Cirrus Altostrat Altocum Stratus Cumul	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken report clouds above, at, o Clouds above mtn Clouds at mtn top Clouds at mtn top Clouds below mtn m AGL CIrrus Altostrat Altocum Stratus Cumul	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Clouds above mtn Clouds at mtn top Clouds above mtn Clouds at mtn top Clouds below mtn MAGL Altostrat Altocum Stratus Curvul
	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel)	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m flight altitudes: Dav = 160 High Middle Vertically Developed	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Rroken Ove mean sea level) and Clouds above mtn Clouds at mtn top Clouds below mtn m AGL MAGL: Night - 500 m A Cirrus Altostrat Altocum Stratus Nimstrat Cumul	N NE S SW E SE W NW N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Rroken Clouds above, at, of Clouds at mtn top Clouds below mtn Clouds below mtn M AGL Cirrus Altostrat Altostrat Altostrat Altostrat Stratus	N NE S SW E SE W NW N NE S SW E SE W NW O Clear Cloudy Scattered Overcast Broken Clouds above mtn Clouds above mtn Clouds below mtn Clouds below mtn Magl
3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel) m Cloud Type	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m fin flight altitudes: Dav = 160 High Middle Low	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Ove mean sea level) and Clouds above mtn Clouds at mtn top Clouds at mtn top Clouds below mtn m AGL Might = 500 m A Cirrus Altostrat Altocum Stratus Nimstrat cumul	N NE S SW E SE W NW N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken report clouds above, at, or Clouds at mtn top Clouds at mtn top Clouds below mtn MAGL GI: Low cloud ceiling = Cirrus Altostrat Altocum Stratus Nimstrat Cumul Cumul	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Clouds above mtn Clouds at mtn top Clouds above mtn Clouds at mtn top Clouds below mtn m AGL No flights Cirrus Altocum Stratus Nimstrat mm
Sky Conditions 3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel) m Cloud Type Rainfall	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m Middle Vertically Developed Low Measure at 0900 hrs e	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Ove mean sea level) and Clouds above mtn Clouds at mtn top Clouds below mtn m AGL Might - 500 m A Cirrus Altostrat Altocum Stratus Nimstrat Cumul Report am Rain Fog	N NE S SW E SE W NW N NE S SW E SE W NW O'Clear Cloudy Scattered Overcast Broken report clouds above, at, o'Clouds above mtn Clouds at mtn top Clouds below mtn MAGL CI: Low cloud ceiling = CIrrus Altostrat Altocum Stratus Nimstrat Cumul Cum	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Clouds above mtn Clouds at mtn top Clouds above mtn Clouds above mtn Clouds at mtn top Clouds above mtn Clouds at mtn top Clouds below mtn m AGL No flights Curus Stratus Nimstrat Cunul
Sky Conditions 3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel) m Cloud Type Rainfall Visual Range	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m Middle Vertically Developed Low Measure at 0900 hrs e	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Ove mean sea level) and Clouds above mtn Clouds at mtn top Clouds at mtn top Clouds below mtn m AGL Might = 500 m A Cirrus Altostrat Altocum Stratus Nimstrat cumul	N NE S SW E SE W NW N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken report clouds above, at, or Clouds at mtn top Clouds at mtn top Clouds below mtn MAGL GI: Low cloud ceiling = Cirrus Altostrat Altocum Stratus Nimstrat Cumul Cumul	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Clouds above mtn Clouds at mtn top Clouds above mtn Clouds at mtn top Clouds below mtn m AGL No flights Cirrus Altocum Stratus Nimstrat mm
Sky Conditions 3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel) m Cloud Type Rainfall	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m Min flight altitudes: Dav = 160 High Middle Vertically Developed Low Measure at 0900 hrs & Name of 3.2 km mark	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Ove mean sea level) and Clouds above mtn Clouds above mtn Clouds below mtn m AGL Might - 500 m A Cirrus CuNim Altostrat Altocum Stratus Cumul Stratus Cumul Rain Fog Haze Smoke more Less than Rain Fog Haze Smoke more Less than Rain Fog Haze Smoke	A STATUS OF THE	N NE S SW E SE W NW N NE S SW E SE W NW O Clear Cloudy Scattered Overcast Broken Or below mountain top. Clouds above mtn Clouds above mtn Clouds below mtn CuNim Altostrat Altocum Stratus Nimstrat Cunul Stratus Nimstrat Stratus Nimstrat Cunul Stratus Stratus Nimstrat Stratus Nimstrat Cunul
Sky Conditions 3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel) m Cloud Type Rainfall Visual Range (Visibility)	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m fin flight altitudes: Dav = 160 High Middle Vertically Developed Low Measure at 0900 hrs (Name of 3.2 km mark)	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Ove mean sea level) and Clouds above mtn Clouds above mtn Clouds at mtn top Clouds below mtn m AGL Might - 500 m A Cirrus CuNim Altostrat Altocum Stratus Cumul Stratus Cumul Rain Fog Haze Smoke	N NE S SW E SE W NW N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken report clouds above, at, of Clouds above mtn Clouds at mtn top Clouds below mtn MAGL CI-row cloud ceiling = Cirrus Altostrat Altocum Stratus Nimstrat Cumul Cum	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Clouds above mtn Cunul
Sky Conditions 3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel) m Cloud Type Rainfall Visual Range (Visibility)	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m Min flight altitudes: Dav = 160 High Middle Vertically Developed Low Measure at 0900 hrs & Name of 3.2 km mark	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Ove mean sea level) and Clouds above mtn Clouds above mtn Clouds at mtn top Clouds below mtn m AGL Might - 500 m A Cirrus CuNim Altostrat Altocum Stratus Cumul Stratus Cumul Rain Fog Haze Smoke	N NE S SW E SE W NW N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken report clouds above, at, of Clouds above mtn Clouds at mtn top Clouds below mtn MAGL CI-row cloud ceiling = Cirrus Altostrat Altocum Stratus Nimstrat Cumul Cum	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Clouds above mtn Clouds at mtn top Clouds below mtn m AGL No flights Curvi Stratus Nimstrat Cunul Stratus Nimstrat Stratus Stratus Nimstrat Stratus Stratus Nimstrat Stratus
Sky Conditions 3.	4.1	Gusts about Steady Wind Direction Variable Wind Direction Cloud Cover Use local mode Cloud Base Ht (Loc Rel) m Cloud Type Rainfall Visual Range (Visibility)	Circle direction steady wind comes FROM Circle 1 or more directions wind comes FROM Use Definitions in Cloud Cover Table untain of known elevation (at Relative to local Mtn m AMSL DewCal (2.1-2.5)/9.8x1000m Min flight altitudes: Dav = 160 High Middle Vertically Developed Low Measure at 0900 hrs e Name of 3.2 km mark	No flights Max N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Ove mean sea level) and Clouds above mtn Clouds at mtn top Clouds below mtn m AGL Cirrus CuNim Altostrat Altocum Stratus Cunul Stratus Cunul Rain Fog Haze Smoke more Less than Rain Fog Haze Smoke Max Nimstrat Smoke Smoke	A N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken report clouds above, at, of Clouds above mtn Clouds at mtn top Clouds below mtn MAGL CI-rus Altostrat Altocum Stratus Nimstrat Cumul Cu	N NE S SW E SE W NW N NE S SW E SE W NW Clear Cloudy Scattered Overcast Broken Clouds above mtn Clouds at mtn top Clouds below mtn MAGL Altostrat Altocum Stratus Nimstrat Nimstrat Main Fog Haze Smoke Main Fog Haze Smoke

	All weather observers write their initials and clearly print their name using block letters							
Γ								
Γ								

M.E.W.S. Summary Weather Observation Log Instructions

Location

Header

Location: Local Place Name

Latitude, Longitude from GPS, survey records or map measurement.

Elevation: Survey records or map measurement

(GPS elevations are not reliable).

Date/Hour: Use local Thai standard time in Observer: initials in box. Full name (print clearly) on top/back of form 24-hour format.

Z.2 Z.3

2.4

2.1 Air (Dry bulb)

Wet Bulb

Difference

Rel. Humidity

Dew Point

RTC-TH M.E.W.S. Weather Observation Log

96RH

%RH

°C

90

°C

96RH

Temperature / Relative Humidity

- 2.1 Air (Dry Bulb) Temp: Read thermometer kept in the shade, 1.5 m above the ground.
- 2.2 Wet Bulb Temp from hyrgrometer kept in the shade, 1.5 m above the ground.
- 2.3 Difference between Dry and Wet Bulb temperatures.
- Use 2.1, 2.4 : HSI Table Heat Stress Heat Stress *C Heat Stress Temperature 2.6 Heat Stress Danger Level (if any from Heat Stress Index table) o'Cautn o'Danger o Ex Cautn o'Ex Dangr o Caute o Danger o Ex Caute o Ex Dange o Ex Caute o Ex Donge
 C
 Wed Chill.
 **C
 Wind Chill.

 GFrsbte10
 GTrsbte210
 GTrsbte30
 GTrsbte30

 GFrsbte36
 GTRsbt Digr
 GFrsbte30
 GFrsbte30

 GFrsbte36
 GFrsbte30
 GFrsbte30
 GFrsbte30
 Use 2.1, 3.1: Wind Chi Tbi Wind Chill. °C

 aTril Drigr afretbet 10

 aTShitr Dgr afretbet 30

 afrestbite afretbet 6 2.7 Wind Chill Danger Level (if any from Wind Chill chart)

Subtract 2.2 from 2.1

Use 2.1, 2.3; RH Table

- 2.4 Relative Humidity: Use Dry Bulb Temp (2.1), Difference (2.3) and Relative Humidity table to find % Relative Humidity.
- 2.5 Dew Point Temperature: Use Dry Bulb Temp (2.1), Difference (2.3) and Dew Point Temp table to find Dew Point Temp.
- 2.6 Heat Stress Temperature: Use Dry Bulb Temp (2.1), % Relative Humidity (2.4) and Heat Stress Index Table to find Heat Stress Temperature and relevant advisory warning.
- 2.7 Wind Chill: Use the Dry Bulb Temp (2.1) and Wind Speed (3.1) and Wind Chill Table to find the Wind Chill Temperature and relevant advisory warning.

Wind Speed / Direction

3.1 Average and Gust Wind speeds: Use Beaufort Table or direct measurements 3 times and average results. Gusts are short, strong blasts of wind. Report wind speeds in knots to air crews. Advise air crews when wind speeds are close to affecting helicopter flight operations.

		Report wind speed in Arnots to air crews; km/h to all others.													
oction		Average	Get 3 readings & average		km/h		knts		km/h		krits		km/h		krts
一点	3.1	Guets	Record highest gust		km/h		knts		km/h		krts		km/h		krts
Sood	'		Wind Speed Guid	eline	s for	- Hel	licop	ter f	ligh	t Op	erati	ons			
		10 kno	ts / 18.5 km/h ideal; OK	to fly	1		ΑI	ove	45 kr	nots /	83 k	m/h;	No fi	ights.	
13	'	Gusts abo	ive 20 knots/37 km/h; N	Vo flig	thts		Max	taily	rind 5	knioł	s/Bl	m/hr	; No	take o	off .
=		Steady Wind	Circle direction steady wind	N	NE	3	:SW	N	NE	9	SW.	N	NE	9	SW
1 6	32	Direction	comes FROM	E	3E	W	DWV	E	ä€	W	NW	E	3E	W	INW
1	32	Wartable Wind	Circle 1 or more directions	N	NE	3	:SW	N	NE	S	SW.	N	NE	5	SW
\perp		Direction	mind comes FR:0M	Ε	SE	W	NW	E	₿E	W	NW	E	SE	W	INW

3.2 Steady or Variably blowing winds. If steady, circle letter for direction. If variable, circle all appropriate letters for directions.

Sky Conditions

- 4.1 Cloud cover: Look at the sky and follow the definitions for each cloud cover classification.
- 4.2 Cloud Base Height: If relative to a local mountain, give its name and elevation above mean sea level. Note Local Relief in meters. If using the Dew Point method, subtract Dew point temp (2.5) from Dry temp (2.1) and divide result by 9.8; multiply quotient by 1000m. Advise air crews when cloud base height (ceiling) are close to affecting helicopter flight operations.
- 4.3 Čloud Type: Check the appropriate box based on cloud description in the guide book

		W. C. S. S. S. S. S.								
	4.1	Cloud Cover	Cov	tions in Cloud or Table	a Broken	c Cloudy edi a Overcast	io Breken	□ Cloudy d □ Overcast	o Strattered o Siroken	
		Use local mou	ntain of know	in elevation (abi	ove mean s	sea level) and	resport cloud	is above, at, o	or bellow mou	ntain top.
		Cloud Base Ht	Relative	to local Min	r: Clouds	above mtn	in Clouds a	bove min	c Clouds alb	ove min
	4.2	(Loc Rel)				at into top-	:: Clouds a	c min top	c Clouds at	mitin topp
					□ Clouds	below mitn	i:: Clouds b	elow mtn	□ Clouds be	low mitn
		m	DewCal (2.1	-2.5y9.8u1000m		m AGL		≃ AGIL		m AGL
		Ndii	n. flight aithu	des: Day = 16 0k	π AGL; Nie	gh at – 500 m A	GL: Low ak	oud ceiling =	No flights.	
2	4.3		High		□ Gimus	DONN'm	io Gimus	::CuNm	ci Cimus	::CuNim
-8			Middle	Vertically	r: Altostra	t	in Altostrat	DOMEST	□ Altostrat	- DOGWIN
2		Cloud Type	Hillowic	Developed	□ Altocum	1	i:: Altocum		c: Allocum	1 1
8			Low	- Consulption	n Stratus	: Cumul	□ Status	□ Cumul	d Stratus	n Oumul
Sky Conditions					o Nimstra	6	io Nimstrat		c Nimstrat	O Cuma
	4.4	Rainfall		ne at 0900 hrs is	ach momir	ng. Report an	nount for last	24 hrs.		mm
4			Name of	3.2 km mark	C) ETFORE	less than		iess than		less than
		** **			ro Rain	□ Fog		n Fog		Fog
		Visual Range			ci Haze	□ Smoke		Smoke		Smoke .
	4.5	(Visbility)	Name of	f 5 km mark	□ more	 less than 		 less then 		less than
					o Rain	□ Feg		o Fog		Fog
					ci Hazze	□ Smoke	-	□ Smoke	-	Smoke
		Helicopti		esibility: Day = .						
				Berstorms	n Yes	□ No	n Yes	n No	n Yes	E3 NO
	4.6	Severe	Lightning	Flash, count secs		ESSWWINW		S SW W NW	N NE E SE S	
		Weather	-grg	tobsom/3	o Yes	Hm	i⊐ Yes	km	o Yes	km
				War	TI AM CEEN	rs of any sev	ere weather	in your area	t.	

- 4.4 Rainfall: Measure water in rain gauge each day at 0900 hrs. Rain gauge should be in open area, away from tall objects, with top of gauge 50 cm above ground to avoid splash water from entering gauge.
- 4.5 Visual Range: Pick landmarks 3.2 km and 5 km from your observation site. Report when visual range is more or less than the known distances to these landmarks. Advise air crews when visual range is close to affecting helicopter flight operations. Check appropriate boxes for reasons of reduced visibility.
- 4.6 Severe Weather: Primary concerns and thunderstorms and lightning. Check the appropriate boxes. If lighting, watch for flash, count seconds until you hear the thunder, divide by 3 = approximate distance in km. Circle direction to storm.

Table of Contents

Section					Page		
	MEWS Lesson	Directory			iv-v		
	Access to MEW	S Lessons on the Web			v-vi		
	Introduction		OA 8	k OB	1-2		
		Form: MEWS Observation L	.og		3		
1.0 Head	der / Location				4-5		
1.1	Latitude / Longi	tude	-		5-6		
1.2	Elevation		0	C	6-7		
1.3	Date / Time (ho	ur)	-		8		
1.4	1.4 Observer						
2.0 Tem	perature Basic 1						
2.1	Air (Dry Bulb) T	emp	Dasic i		9		
2.2	Wet Bulb Temp			Autord	9-10		
2.3	Difference			Adv 1	10		
0.4	Relative Humidi	ty			10-12		
2.4		Chart: Relative Humidity Tal	ble		11		
0.5	Dew Point Tem	p		Adv 3	12		
2.5		Chart: Dew Point Temperature	Table		13		
0.0	Heat Stress Temp Adv 1						
2.6		Chart: Heat Stress Index Ch	art		16		
2.7	Wind Chill Temp Adv 2						
2.7			Wind	Chill Chart	16		
3.0 Wind	Speed and Dir	rection					
		Average	Basic 2	Adv 2	17		
0.4	\\\(\(\) \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	Gusts					
3.1	Wind speed	Chart: Modified Beauf	ort Wind Char	rt .	18		
		Chart: Dwyer Wind Gauge	19				
0.0	Min al alina ations	Steady	Doois 0		00.04		
3.2	Wind direction	Variable	Basic 3		20-21		
4.0	Sky Condition	n					
	Cloud Cover		Basic 4		22		
4.1	Chart: Cloud Cover Chart						
4.2	Cloud Base Hei	ght	Basic 5	Adv 3	00		
4.2.1	Estimated by Cl	oud Type or Relative to Local Mou	ntain		23		
4.2.2	Cloud Base Height	Calculated by Dew Point Temperature		Adv 3	23-24		
4.0	Cloud Type		Basic 6		24		
4.3		Chart: Cloud Identification Cl	nart		25		
4.4	Rainfall Adv 4						
4.5	Visual Range		Basic 7		28-29		
16	Severe Weathe	Severe Weather Basic 8 Adv 5					
4.6	Chart: "Flash to Boom" Reference Chart						
App 1	Weather Observ	vation Equipment			31		
App 2	Weather Foreca	asting	Basic 6	Adv 6	32-35		
App 3	Conversion Ref	erences			36		
App 4	Notes about Su	pporting Flight Opeartions			37		



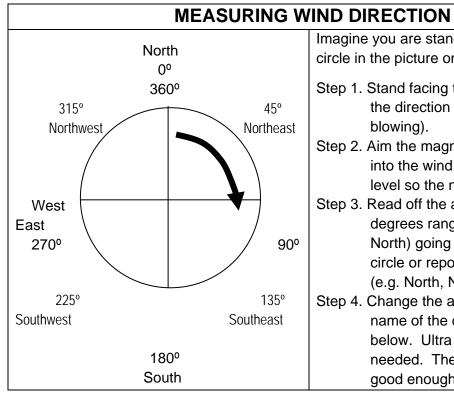
Beaufort Wind Table for Land Effects

MEWS weather observers should set up a flag near their operating position. Use the Description and flag references to estimate the wind speed. Report the range of wind speeds from the chart rather than a specific number.

spee	ds from the chart ra	ather than a s	specific i	number.				
Description	Flag	WMO term	Mph	Km/ hr	Knots	Force	Psu lbs/sq ft (Kg/sq m)	
		ш	F	Report win	d speed i	n knots to flight crews		
Calm; smoke rises vertically		Calm	<1.0	<1.5	<0.9	0	0.006266 (0.003059)	
Smoke indicates wind; fl hangs limp, wind vanes not move	9 10	Light Air	1-3	1.5-6	1-3	1	0.02924 (.01428)	
Wind felt on face, leave rustle, flag stirs, wind	s la	Light breeze	4-7	6-12	4-6	2	0.142 (0.6934)	
vanes move		5 l	Knots m	aximum ta	ilwind for	helicopte	r take-off	
Leaves and twigs in constant motion; flag		Gentle Breeze	8-12	12-20	7-10	3	0.3759 (1.835)	
occasionally extends	pea		10 Knots	ideal for l	helicopter	flight ope	erations	
Dust and paper fly; sma branches move; Flag fla	10 1	Mild Breeze	13-18	21-29	11-16	4	0.8145 (3.977)	
Small leafy trees begin sway; white crested wavelets appear on	to	Fresh Breeze	19-24	30-39	17-21	5	1.504 (7.342)	
lakes/ponds; Flag ripple	es "	20 Kn	ots max	imum gust	s for helic	copter fligi	ht operations	
Large branches move wires whistle; umbrella hard to use; Flag snap	s	Strong Breeze	25-31	40-50	22-27	6	2.485 (12.13)	
Whole trees sway; hard walk; Flag extended	to I	Near Gale	32-38	51-61	28-33	7	3.822 (18.66)	
Twigs and small branch broken; cars veer on roa Flag tatters	11/	Gale	39-46	62-74	34-40	8	5.597 (27.33)	
Slight structural damage	1000	Strong Gale	47-54	75-87	41-47	9	7.769 (37.93)	
Source (1901 Stilligios blow (19: 15: E. W.	45 Kno	ots maxi	mum wind	ls for helic	copter flig	ht operations	
Trees broken or uproote considerable damage t buildings	(Storm	55-63	88-101	48-55	10	10.53 (51.39)	
Wide spread damage		Violent Storm	64-72	02-114	56-63	11	13.78 (67.3)	
caused		Hurricane	>73	>115	>63	12	>13.78 (>67.3)	
Dicclaimar, Llca of the	proceure data to cal	culata tawarlar	atonna w	ind lands is	at vour o	un rick Th	o DTC TH and	

Disclaimer: Use of the pressure data to calculate tower/antenna wind loads is at your own risk. The RTC-TH and HSØZHM assume no liability for the use of this data. Pressure values are the upper limits for a wind category.

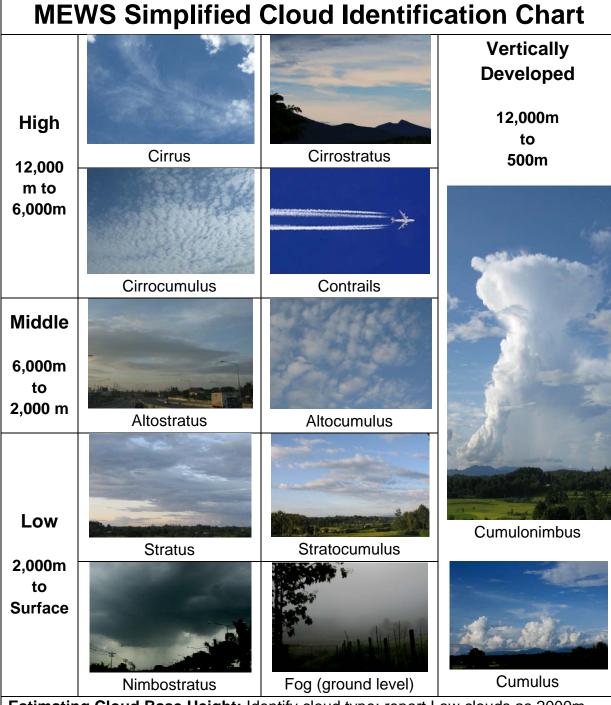
	Wind Speed Conversion Table									
mph	km/h	knots		mph	km/h	knots		mph	km/h	knots
1	1.61	0.869		9	14.48	7.821		45	71.42	39.10
2	3.22	1.738		10	16.09	8.69		50	80.47	43.45
3	4.83	2.607		15	24.14	13.03		55	88.51	47.79
4	6.44	3.476		20	32.19	17.38		60	96.56	52.14
5	8.05	4.345		25	40.23	21.72		65	104.60	56.48
6	9.66	5.214		30	48.28	26.07		70	112.70	60.83
7	11.27	6.083		35	56.33	30.41		75	120.70	65.17
8	12.87	6.592		40	64.37	34.76		80	128.70	69.52
		Re	epo	ort wind s	speeds in k	nots to air	cre	WS.		
		Wind Spe	ed	Guidelir	nes for Heli	copter Fliq	ght C	Operation:	S	
	10 knots	/ 18.5 km/h i	de	al; OK to	fly	Abo	ove 4	15 knots / 8	83 km/h; No	Flights
G	iusts above	20 knots / 3	7 k	m/h; No I	Flights	Max t	Max tailwind 5 knots / 6 km/h; No take off.			
		Advise air c	rev	vs when v	vind velociti	ies approac	h gu	ideline lim	its.	



Imagine you are standing in the middle of the circle in the picture on the left.

- Step 1. Stand facing the wind (looking into the direction from which the wind is blowing).
- Step 2. Aim the magnetic compass directly into the wind, but keep the compass level so the needle swings freely.
- Step 3. Read off the azimuth angle in degrees ranging from 0° (starting at North) going clockwise around the circle or report the general name (e.g. North, Northeast, etc.)
- Step 4. Change the azimuth number into the name of the direction using the table below. Ultra precision is not needed. The general direction is good enough.

Sky Condition: (Cloud Cove	r Terms
	Clear	
	Sky is blue with no clouds or very few small clouds.	
	Scattered	
	Sky is blue, but small patches of clouds are present.	
	Broken	A THE STATE OF THE
	Large patches of clouds, but patches of blue sky can be seen between the clouds.	
	Cloudy	-
	The sky is covered mostly with clouds and a few blue patches.	
	Overcast	The state of
	Clouds cover the sky; no patches of blue can be seen.	



Estimating Cloud Base Height: Identify cloud type; report Low clouds as 2000m, use lower limit for other cloud types.

Flight Advisories: Report flight advisory to air crews for the following conditions. **Low Clouds** near or at I60m AGL (day); 500m AGL (Night). No flights if below these minimum limits.

Reduced Visibility: Smoke, dust, haze, fog reducing visual range to 3.2 km (Day) or 5 km (Night); No flights if below these minimum limits.

Severe Weather: Thunderstorms, lightning, heavy rain, excessive winds, or other weather extremes.

	Name	Cloud Description		Altitude				
Code	INAIIIE	Cioda Description	m	ft				
Ci	Cirrus	Delicate, wispy, feathery; streaky, stringy; slow moving; doesn't block the sun; mares tails—large ice crystals extending down	6,000	20,000	High (Ice)			
Сс	Cirrocumulus	Cirrocumulus Thin sheets or closely packed small puffs without shadows; "mackerel" sky						
Cs	Cirrostratus	Whitish veil, usually fibrous; makes halo around the sun or moon.	12,000	40,000	Ī			
Ac	Altocumulus	Layer of separate cloud masses; fit closely in geometric pattern; blue sky visible between masses; white or gray on shaded side; associated with bad weather.	2,000 to	6,500 to	Middle			
As	Altostratus Extensive, eve, gray layer over entire sky; gray, smooth botto sun is a bright spot; associated with bad weather.		6,000	20,000	Σ			
St	Stratus	Dense, dark gray layer; uniform base						
Ns	Nimbostratus	Dense, dark gray layer with precipitation (rain or snow); thick enough to block the sun	Ground	Ground	>			
Sc	Stratocumulus	Distinct gray masses (long rolls, right angles to the wind and cloud motion) with patches of open sky, flat tops; often associated with fair or clearing weather; but snow flurries or rain are possible from individual cloud masses.	to 2,000	to 6,500	Low			
Cu	Cumulus	White, wooly mass, flat base, lumpy top; gray or dark on shaded side or bottom; small clouds associated with fair weather.	300 to 1,525	1,000 to 5,000	Il Dev.			
Cb	Cumulonimbus	White, anvil shaped top; very dark base; vertical dimension greater than horizontal; heavy rainfall, thunder, lightning, gusty winds, hail possible; strong updrafts	12, 000 to 300	40,000 to 1,000	Vertical Dev.			

Thunder / Lightning

Step 1. Watch for lightning flash; count seconds (Time) until hearing the thunderclap.

Step 2. Use the reference table below or divide the Time (in seconds) from Step 1 by:

- 3 to get the distance in kilometers (km)
- 5 to get the distance in miles (mi)

Lightning Hazard: When the flash and thunderclap are almost instantaneous, you may be in trouble. People have been struck by lightning 30 miles away from a thunderstorm.

Report severe weather (e.g. thunderstorms and lightning) to all air crews.

# Seconds	km	mi
1	0.33	0.20
2	0.67	0.40
3	1.00	0.60
4	1.33	0.80
5	1.67	1.00
6	2.00	1.20
7	2.33	1.40
8	2.67	1.60
9	3.00	1.80
10	3.33	2.00

# Seconds	km	mi
11	3.67	2.20
12	4.00	2.40
13	4.33	2.60
14	4.67	2.80
15	5.00	3.00
16	5.33	3.20
17	5.67	3.40
18	6.00	3.60
19	6.33	3.80
20	6.67	4.00

Optional Basic Weather Forecasting with Clouds

Materials needed:

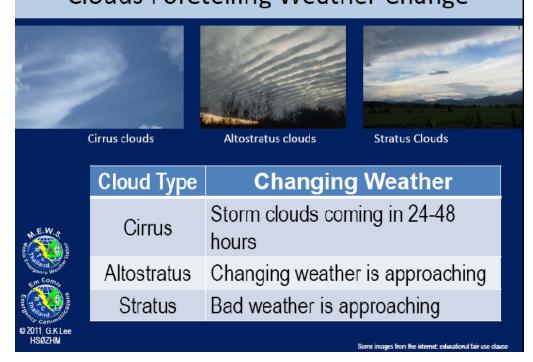
- MEWS Simplified Cloud Identification Chart
- Completed MEWS Weather Observation forms for the previous 3 days (These must have Section 4.3 Cloud Typoe data.)

What to do:

Look for patterns of sequential change in cloud types

Weather Forecasting by Cloud Changes Watching the changes in clouds is fundamental to weather forecasting Clear / Fair Changing Stormy / Rainy **Cloud Feature** Weather Weather Weather Altocumulus Cirrus Altostratus Cloud Type Cumulus Cirrostratus Cumulonimbus Cirrocumulus Nimbostratus Cloud (sky) Decreasing Increasing cloudiness cloudiness cover Cloud Base Increasing Decreasing height Height height Get the Cloud Type data from log form Section 4.3

Clouds Foretelling Weather Change



Weather Forecasting by Cloud Observation

If the change is from Cumulus to Cirrus type clouds, there may be a change in 24-48 hours to possible stormy or rainy weather.









Cumulus

Cirrus clouds

Cirrostratus

Cirrocumulus



Cloud Feature	Clear / Fair Weather	Changing Weather
4.1 Cloud cover	Decreasing cloudiness	Increasing cloudiness
4.2 Cloud Base Ht	Increasing height	Decreasing height
4.3 Cloud Type	Cumulus	Cirrus Cirrostratus Cirrocumulus

Weather Forecasting by Cloud Changes

If rain clouds are followed by Cirrus type clouds, fair / clear weather is 24-48 hours away.













Cirrus

Cirrostratus Cirrcumulus

Altocumulus

Cumulonimbus Nimbostratus



Cloud Feature	Changing Weather	Stormy / Rainy Weather
4.1 Cloud cover	Decreasing cloudiness	Increasing cloudiness
4.2 Cloud Base Ht	Increasing height	Decreasing height
4.3 Cloud Type	Cirrus Cirrostratus Cirrocumulus	Altocumulus Altostratus Cumulonimbus Nimbostratus

Clouds of Fair Weather







Altocumulus clouds



Cloud Type	Fair Weather	
Cumulus	When small and widely scattered	
Altocumulus	Settled weather conditions	

Rainy Weather Clouds

