COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT

Landing Zone (LZ) Training







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Training Syllabus



LANDING ZONE TRAINING FOR FIRST RESPONDERS

- Importance
 - Why is This Important? SAFETY
 - Landing Zone Commander Responsibilities
 - Night Pre-Designated Landing Zone Program
- Choosing Landing Zone
 - LZ Procedures
 - Obstructions / Wires
 - Surface
 - Landing Zone Setup

- Flight Planning
 - Route of Flight
 - Weather
 - Risk Assessment
 - 2-Patient Configuration
 - Special Concerns
- Approach/Departure Phases
 - Ground Operations
- Emergency Shut-Down
- Night Operations
- General Safety Rules



COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT



IMPORTANCE



COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT



Importance

SAFETY IS NOT AN ACCIDENT

Although landing a Helicopter at an emergency scene may appear routine, it is a highly demanding task intensive maneuver. People have and will continue to be injured during this critical type of landing. Our goal, with **your help**, is to continue our outstanding safety record at Collier County MedFlight.





MEDFLIGHT Importance

LZ COMMANDER Responsibilities

SPECIFICALLY DEDICATED TO HELICOPTER THROUGHOUT ENTIRE OPERATION

- Landing zone briefing and additional radio communication if necessary
- Tasked with scene security before, during, and after landing zone operations
 - ♦ If available a tail guard should also be utilized while aircraft is on scene.





MEDFLIGHT Importance

CHP Helicopter Crewmember Critically Injured. Flight Officer/Paramedic Tony Stanley was struck by a main rotor blade during a rescue.....July 9, 2012





A medic for the Arizona
Department of Public Safety
was killed in Sedona, Ariz.,
after he was struck by the rotor
blade of a rescue
helicopter....October 15, 2008





MEDFLIGHT Importance

Night Pre-DESIGNATED LZs

CCHO MEDFLIGHT - DESIGNATED LANDING ZONES

ING <u>DAYLIGHT HOURS,</u> MEDFLIGHT MAY BE DISPATCHED TO ANY LOCATION MEETING ESTABLISHED LANDING ZONE CRITERIA: 100X100, FREE OF OBSTACLES AND HAZARDS

'ALL OF 1-75 IS CONSIDERED A DESIGNATED LANDING ZONE

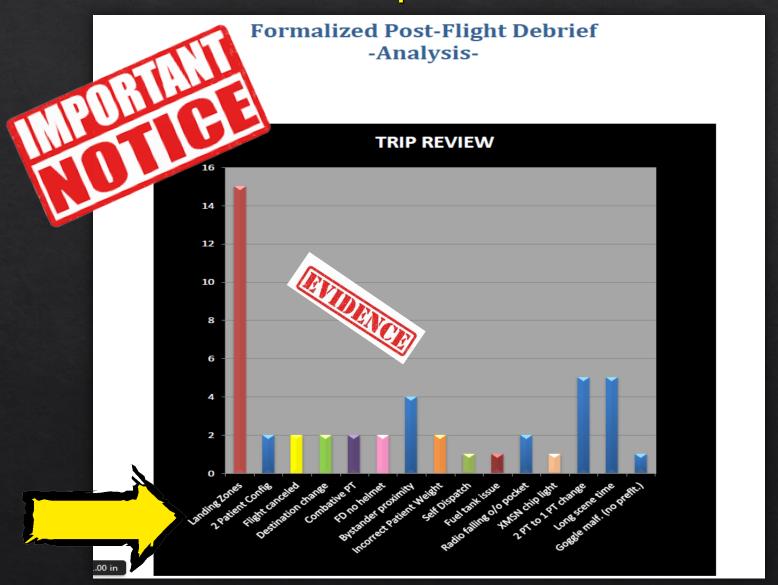
FIRE ZONE	ZON E	CCSO DIST.	ID ESEL	DAY / NIGHT	GEOGRAPHIC LOCATION	GPS COORDINATES 26 20.37 / 081 32.8	
NCFR	10				ESTATES ELEMENTARY SCHOOL (SPORTS FIELD SE OF BLDG)		
NCFR	43	D1	FBCH	NIGHT	FIRST BAPTIST CHURCH / VANDERBILT DR (8 OF BLDG)	26 19.43 / 081 49.0	
NCFR	10	D4	EGEN	NIGHT	E'6 COUNTRY STORE (FIELD 8 OF STORE)	26 17.47 / 081 35.6	
NCFR	42	D1	NCHNE	NIGHT	NCH-NE HOSPITAL (BELLAIRE BAY DR. N OF HOSPITAL)	26 16.65 / 081 41.3	
NCFR	44	D1	NCHNE	NIGHT	NORTH COLLIER HOSPITAL (NEW HOSPITAL HELIPAD)	26 16.44 / 081 47.2	
NCFR	44	D1	CREE	NIGHT	CREEKSIDE & GOODLETTE-FRANK (FIELD BY ARTHREX BLDG)	26 16.19 / 081 47.4	
NCFR	10	D4	CPMS	NIGHT	CYPRESS PALM MIDDLE SCHOOL (SPORTS FIELD E OF BLDG)	26 15.98 / 081 31.5	
NCFR	42	D1	WATE	NIGHT	WATER PARK ON LIVINGSTON RD (SPORTS FIELD E OF PARK)	26 15.85 / 081 44.7	
NCFR	44	D1	ST44	NIGHT	FIRE STATION 44 (FIELD W STATION)	26 15.03 / 081 48.4	
	46	D1		NIGHT	FIRST BAPTIST ACADEMY (FIELD & OF ENTRANCE)		
NCFR NCFR	46	D2	FBAC		PHYSICIANS REGIONAL PINE RIDGE	26 13.97 / 081 45.3 26 12.86 / 081 43.9	
NCFR	40	D1	GLPR	NIGHT		26 12.83 / 081 47.4	
NCFR	40	NPD	SGEL	NIGHT	GOODLETTE & PINE RIDGE (FIELDW OF SWEETBAY)		
NCFR				NIGHT	SEAGATE ELEMENTARY SCHOOL (SPORTS FIELD 8 OF BLDG)	26 12.55 / 081 48.3	
	24	D1	PAEL	NIGHT	POINCIANA ELEMENTARY SCHOOL (SPORTS FIELD W / BLDG)	26 10.89 / 081 46.2	
CNFD	2	D1 NPD	PARK	NIGHT	HWY 41 & PARK SHORE DR (OPEN FIELD N OF PARK SHORE DR)	26 11.68 / 081 48.0	
CNFD	1	NPD	FLEI	NIGHT	FLEISCHMANN PARK (FOOTBALL/SOCCER FIELD)	26 09.99 / 081 48.3	
CNFD	1		NCH	NIGHT	NAPLES COMMUNITY HOSPITAL	26 09.06 / 081 47.8	
CNFD	1	NPD	GVMI	NIGHT	GULFVIEW MIDDLE SCHOOL (SPORTS FIELD)	26 08.65 / 081 47.8	
CNFD	1	NPD	STAN	NIGHT	SAINT ANN SCHOOL (SPORTS FIELD)	26 08.24 / 081 47.9	
GNFR	71	D2	ST71	DAY ONLY!	FIRE STATION 71	26 13.60 / 081 38.0	
GNFR	71	D2	BCEL	NIGHT	BIG CYPRESS ELEMENTARY SCHOOL (SPORTS FIELD)	26 13.57 / 081 40.3	
GNFR	71	D4	PMEL	NIGHT	PALMETTO ELEMENTARY SCHOOL (FIELD AT ENTRANCE)	26 12.72 / 081 32.8	
GNFR	70	D2	RITA	NIGHT	RITA EATON COMMUNITY PARK	26 11.67 / 081 42.7	
GNFR	70	D2	GGMI	NIGHT	GOLDEN GATE MIDDLE SCHOOL (SPORTS FIELD SE OF BLDG)	26 10.59 / 081 42.7	
GNFR	25	D7	MM90	NIGHT	I-75 MILE MARKER 901	26 09.10 / 081 30.2	
GNFR	24	NPD	MHQ	NIGHT	MEDFLIGHT HQ	26 08.86 / 081 46.6	
GNFR	75	D3	CPEL	NIGHT	CALUSA PARK ELEMENTARY SCHOOL (SPORTS FIELD)	26 08.61 / 081 42.9	
GNFR	22	D3	ALEL	NIGHT	AVALON ELEMENTARY SCHOOL (SOCCER FIELD)	26 06.45 / 081 45.8	
GNFR	25	D3	PRCB	NIGHT	PHYSICIANS REGIONAL COLLIER BLVD	26 06.39 / 081 41.1	
GNFR	23	D3	ELCP	NIGHT	EAGLE LAKES COMMUNITY PARK (SE SOCCER FIELD)	26 04.39 / 081 42.9	
GNFR	23	D3	MAMI	NIGHT	MANATEE MIDDLE SCHOOL (SPORTS FIELD SE CORNER)	26 02.70 / 081 40.6	
ICFD	90	D3	FIDD	NIGHT	FIDDLERS CREEK (FIELD N OF ENTRANCE)	26 01.35 / 081 42.0	
ICFD	90	D3	CAPR	NIGHT	ISLE OF CAPRI FIRE STATION	25 59.06 / 081 43.6	
IFFD	31	D8	SOCC	NIGHT	SOCCER FIELD (8R 29 AND JOHNSON RD.)	26 28.32 / 081 26.1	
IFFD	31	D8	CORK	NIGHT	CORKSCREW RD. (BEND EAST TO NORTH)	26 27.10 / 081 33.8	
IFFD	31	D8	IORC	NIGHT	IMMOKALEE OUTPATIENT REHAB CENTER (FIELD W BLDG)	26 26.66 / 081 26.0	
IFFD	31	D8	ST31	NIGHT	IMMOKALEE EMS STATION 31 (PARK IN FRONT OF BASE)	26 26.04 / 081 26.9	
IFFD	30	D8	ST30	NIGHT	IMMOKALEE EMS STATION 30	26 25.01 / 081.24.9	
IFFD	30	D4	CAKE	NIGHT	CAMP KEAIS RD. & IMMOKALEE RD (FIELD SE OF INTERSEC)	26 22.47 / 081 24.9	
IFFD	32	D4	AVEM	NIGHT	AVE MARIA (SOCCER FIELD N CORNER)	26 20.45 / 081 26.4	
IFFD	32	D4	ARTH	NIGHT	ARTHREX BLDG (OIL WELL RD)	26 17.76 / 081 26.6	
IFFD	30	D8	82LA1	NIGHT	SR 82 LANDING AREA1 .25 MILE	26 29.31 / 081 26.8	
IFFD	30	D8	82LA2	NIGHT	SR 82 LANDING AREA2 .25 MILE	26 29.79 / 081 28.6	
IFFD	30	D8	82LA3	NIGHT	SR 82 LANDING AREA3 .25 MILE	26 30.06 / 081 29.7	
MIFD	50	D3	NCCB	DAY ONLY!	NAPLES CRUISE CLUB	26 00.91 / 081 45.7	
MIFD	50	D3	KMKY	NIGHT	MARCO ISLAND AIRPORT	26 00.00 / 081 40.5	
MIFD	50	D7	KEEW	DAY ONLY!	KEEWAYDIN ISLAND	25 59.50 / 081 45.1	
MIFD	50	MIPD	MARC	NIGHT	MARCO ISLAND URGENT CARE	25 56.31 / 081 43.1	
MIFD	50	MIPD	CAXA	DAY ONLY!	CAXAMBAS ISLAND	25 50.67 / 081 40.7	
OCFR	60	D7	MM50	NIGHT	I-75 MILE MARKER 501	26 10.40 / 080 52.8	
OCFR	60	D7	ST63	NIGHT	STATION 63	26 10.02 / 081 04.4	
OCFR	60	D7	MM70	NIGHT	I-75 MILE MARKER 701	26 10.00 / 081 12.6	
OCFR	60	D7	MM80	NIGHT	I-75 MILE MARKER 801	26 09.20 / 081 20.6	
OCFR	60	D3	PORT	NIGHT	PORT OF ISLES (FIELDS W OF BRIDGE)	25 57.50 / 081 30.8	
	60	D7	CARN	DAY ONLY!	CARNESTOWN		
OCFR OCFR	60	D7	OCHO		OCHOPEE FORESTRY HQ	25 54.41 / 081 21.9 25 53.99 / 081 19.2	
				NIGHT			
OCFR	60	D7	OASI	NIGHT	OASIS RANGER STATION	25 51.45 / 081 02.0	
OCFR	60	D7	EVER	NIGHT	EVERGLADES AIRPORT (XD1)	25 50.60 / 081 23.4	
OCFR	60	D7	LULU	DAY ONLY!	CAMP LULU KEY	25 50.11 / 081 30.5	
OCFR	60	D7	RABB	DAY ONLY!	RABBIT KEY	25 45.09 / 081 22.6	
OCFR	60	D7	PAVI	DAY ONLY!	PAVILLION KEY	25 41.88 / 081 21.3	

- What about during day?
- Found in every truck and LZ control App on Medic Phones.
- An updated landing zone list is always available at colliercountyfl.gov/MedFlight



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MEDFLIGHT Importance





COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT



CHOOSING A LANDING ZONE





MEDFLIGHT Choosing A Landing Zone

- During all operations, the LZ must be at least 100'x100' and clear of obstructions.
- During night operations, the use of Pre-Designated Landing Zones is required.
 - ♦ Always reference the 4-letter identifier shown as "ID" in the table when requesting MedFlight from Control
- Scene Calls- brief description of location i.e., intersection or GPS coordinates in "Degrees decimal minutes" format is ideal.
- Review your zone to ensure you know where your night pre-designated LZ's are located and named.

CCHO MEDFLIGHT - DESIGNATED LANDING ZONES

DURING <u>DAYLIGHT HOURS</u>, MEDFLIGHT MAY BE DISPATCHED TO ANY LOCATION MEETING ESTABLISHED LANDING ZONE CRITERIA: 100X100, FREE OF OBSTACLES AND HAZARDS

¹ALL OF I-75 IS CONSIDERED A DESIGNATED LANDING ZONE

²ALL LANDING ZONES DESIGNATED FOR <u>NIGHT</u> ARE ALSO SUITABLE FOR <u>DAY</u> OPERATIONS

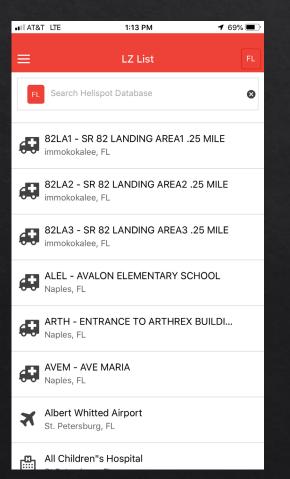
8/23/2016

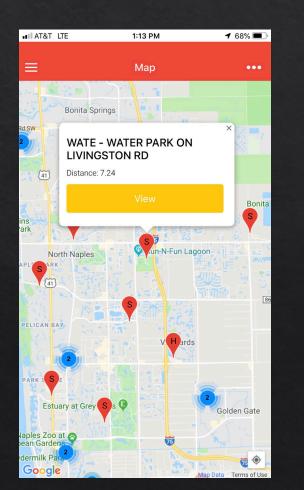
FIRE ZONE	EMS ZONE	CCSO DIST.	ID	DAY / NIGHT	GEOGRAPHIC LOCATION	GPS COORDINATES
NCFR	10	D4	ESEL	NIGHT ²	ESTATES ELEMENTARY SCHOOL (SPORTS FIELD SE OF BLDG)	26 20.37 / 081 32.85
NCFR	43	D1	roof	NIGHT	FIRST BAPTIST CHURCH / VANDERBILT DR (S OF BLDG)	26 19.43 / 081 49.08
NCFR	10	D4	EGEN	NIGHT	E's COUNTRY STORE (FIELD S OF STORE)	26 17.47 / 081 35.67
NCFR	42	D1	NCHNE	NIGHT	NCH-NE HOSPITAL (BELLAIRE BAY DR. N OF HOSPITAL)	26 16.65 / 081 41.30
NCFR	44	D1	NCHN	NIGHT	NORTH COLLIER HOSPITAL (NEW HOSPITAL HELIPAD)	26 16.44 / 081 47.28
NCER	10	D/I	CPMS	NIGHT	CYPRESS PALM MIDDLE SCHOOL (SPORTS FIFLD FIGERLING)	26 15 98 / 081 31 57

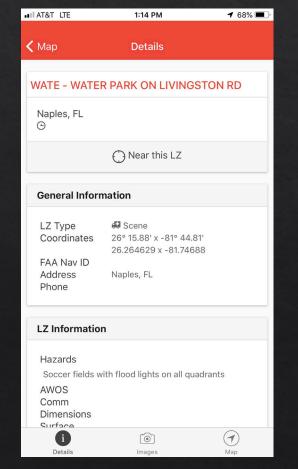


MEDFLIGHT Choosing A Landing Zone

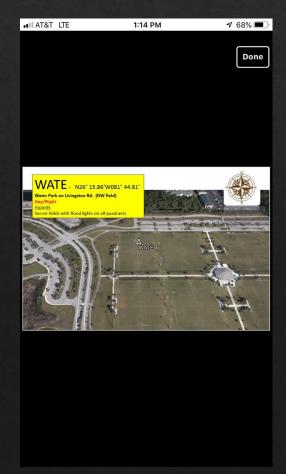
















MEDFLIGHT Choosing A Landing Zone

OBSTRUCTIONS

- **♦ Wires**
- **⋄** Trees
- Light Poles
- **⋄** Buildings
- **⋄ Vehicles**
- **⋄** Tree Stumps
- **The Construction Debris**
- ♦ People





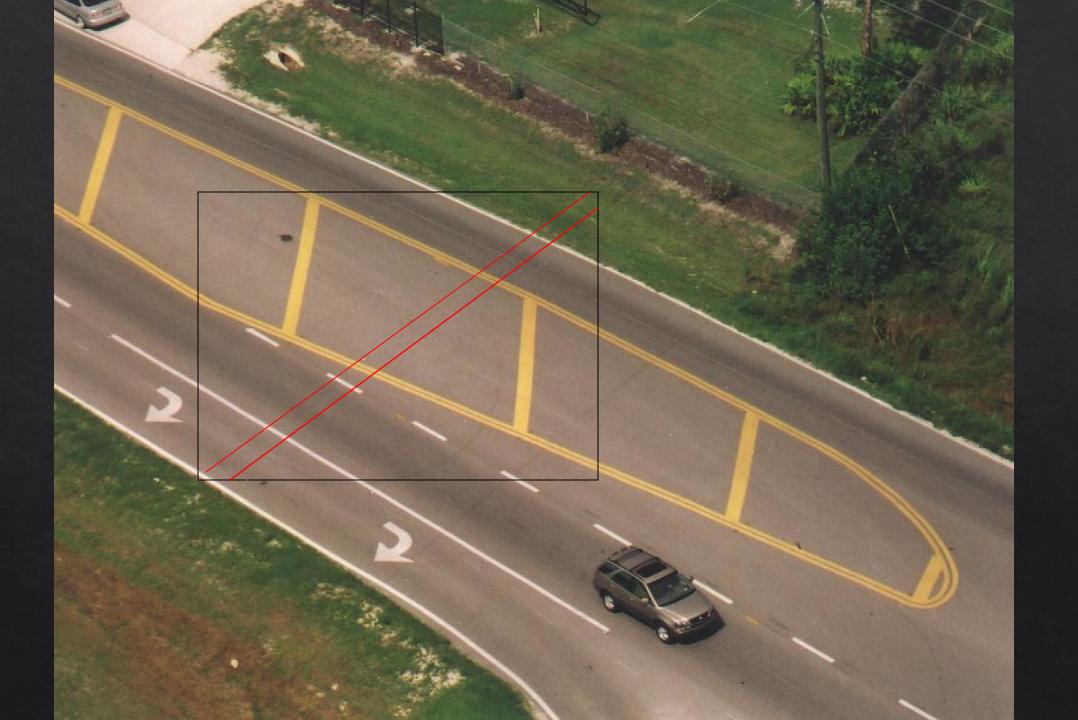


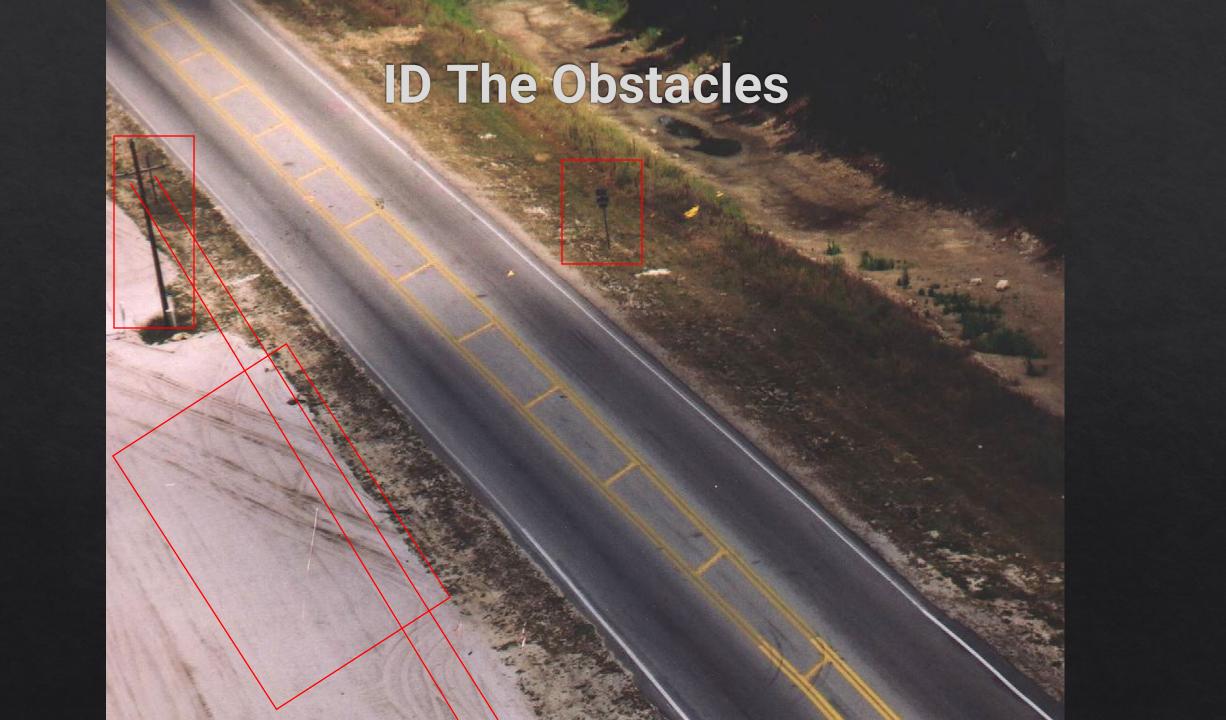
MEDFLIGHT Choosing A Landing Zone

WIRES

- Nearly invisible from the sky
- ♦ Look for wires crossing the LZ
- Visually confirm the direction of wires coming off every pole in the area
- Inform the MedFlight crew during Landing Zone briefing







Crosh Powerlines Empuriabrava













SURFACE TYPES

♦ SECOND - Blacktop

♦ THIRD - Sod or Grass

♦ FOURTH - Compacted earth lightly wetted

♦ Last choice is sand, dirt or brush area





MEDFLIGHT Choosing A Landing Zone

AREA

- Avoid sandy dusty areas (unless you can wet the surface before our arrival)
- ♦ Should be relatively level Minimal slope
- **♦** Clear area
 - **⋄** Clear of debris
 - **♦ Large rocks**
 - **⋄** Posts & Signs
 - **⋄ Stumps**

- **⋄ Vehicles**
- ♦ People
- **⋄** Animals
- **⋄** Hazards

SLOPES

Incorrec





Correct





MEDFLIGHT Choosing A Landing Zone

Brown Out

 Dry areas present a potential hazard for "brown out." A condition which severely restricts visibility during the critical landing phase of flight due to blowing dust







Brown Out







Brown Out









MEDFLIGHT Choosing A Landing Zone

APPROACH AND DEPARTURE PATHS

- Obstacles and patient treatment area
- Wind speed and direction
- Landing and Taking off into the wind.
- Helicopter should land downwind of patient care area.
- Sufficient distance from LZ to accident scene to avoid downwash

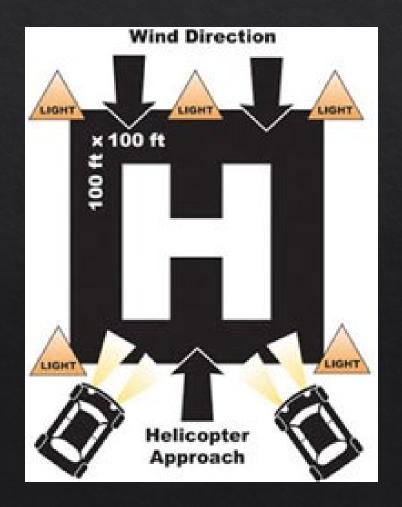




MEDFLIGHT Setup Landing Zone

LZ SET-UP

- Set markers (5) on the four corners and 1 marker on the upwind side of the landing area
- Always keep the landing area clear of people/vehicles
- Do not point spotlights at the cockpit of the aircraft
- 100x100 is Required





COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT



FLIGHT PLANNING





MEDFLIGHT Flight Planning







MEDFLIGHT Flight Planning

Why Does It Take So Long?

#1 Question we get is why does it take so long to launch?

What It Takes To Launch MedFlight

Tones

- •Flight Medics Actions
 - •Call to find out LZ from Control/Scene CDR (1-5 min.)
 - •Call for patient weight
 - •Pull helicopter out of hangar (2 min.)
 - •Perform walk around and plug-in APU (1 min.)
- •Pilot-in-Command Actions
 - •Evaluates weather for departure point, LZ, and hospital (3-5 min.)
 - •Complete Weight & Balance calculations (2 min.)
 - •Complete Risk Assessment (30 sec.)
 - •Complete route planning tasks for all 3 legs of flight record results (2 min.)
 - •Perform walk around and brief Flight Medics (1 min.)
- Both
 - Starting procedures and launch aircraft (2-3 min.)

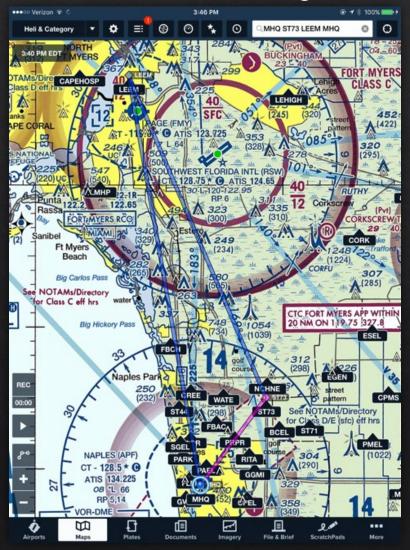
Average Launch Time = 7-10 minutes



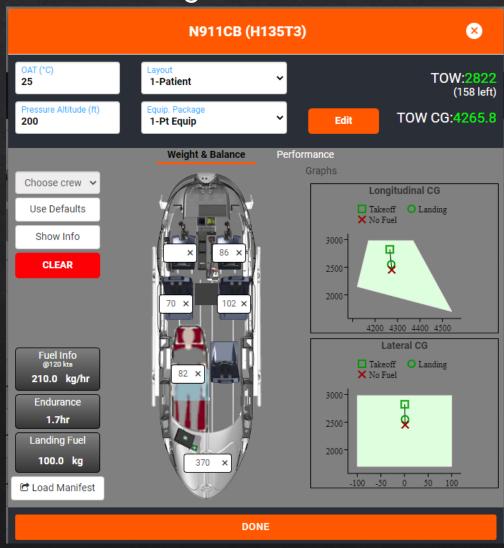


MEDFLIGHT Flight Planning

Route Planning



Weight & Balance







MEDFLIGHT Flight Planning

Risk Assessment

Risk Assessment				*	
	23085			<u>.</u>	
	Dynamic Risk	Clear			Н
	Flight Regime]			
	Day Flight				
	NVGs In Use				
	Night Flight No NVGs				
	Flight 1-5 am				
	Outside Local Flying Area				۰
	Landing Zone]		
	Scene Flight				
	Unimproved Pre-Designated LZ				
	Hospital Pad or Airport				
	Weather]		
	Wx 1000 to 3000 or >3<5 vis or MVFR				
	Wx <1000 or <3 or IFR				
	Wx Abort by Other Operator				
	Wx Turndown by Other Operator				
	Temp/Dewpoint within 4'F with <5 kts wind	0			
Total: 4	NFIRM APPROVAL		Sign and Submit	Print	





MEDFLIGHT Flight Planning

2-Patient Configuration

- Preferred Prior to leaving MHQ
- Takes approximately 3 minutes
- If required on-scene, helicopter will be shut down for pilot assist (Cold Load)
- May require additional personnel to assist in loading patients







COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT Flight Planning



Helicopter Shopping

It is vitally important that the aircraft requestor NOT attempt to call multiple helicopter operators when the first program declines the flight due to weather.

The industry is plagued with "Chopper Shopping" crashes caused by the lack of information from one program to the next.

LZ Commanders have the responsibility to not delay transport of a patient in an attempt to "find a helicopter".

If a program cancels due to weather DO NOT delay patient transport. If you call for a second helicopter you MUST inform the second operator that the first choice refused the flight due to weather.





MEDFLIGHT Flight Planning

What you See

What We See





Hospital

You



COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT



APPROACH & DEPARTURE





MEDFLIGHT Approach & Departure

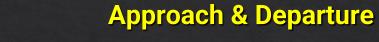
LZ Briefing

- All communication for Landing Zone information will take place on AIR OPS channel
- Contact will be initiated by the MedFlight crew after launch (approx. 5 min out)
 - Estimated time to Landing Zone
 - · Request Landing Zone briefing
- Your landing zone briefing should consist of:
 - · Your location in the landing zone
 - Known obstacles and hazards
 - Approximate wind speed and direction
 - · Specific instructions to identify exact location for the helicopter

<u>Sterile Cockpit Procedures:</u> FAA regulation restricts flight crews from nonessential communications during critical phases of flight.



MEDFLIGHT Approach & Departure





Don't Stand in the wrong place

Don't Stand in the wrong place

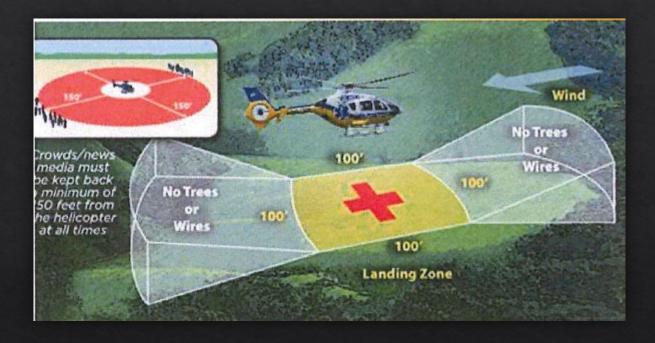






MEDFLIGHT Approach & Departure

APPROACH AND DEPARTURE PATHS





COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT Approach & Departure



Landing Zone Brief

- Obstacles
- •Wind Direction and Speed
- Describe where you want the aircraft to land

Why is it important to tell the pilot wind information?







MEDFLIGHT Approach & Departure

LANDING PHASE

- Maintain radio contact with the helicopter on AIR OPS
- ♦ Maintain LZ security 2 minutes after take off
 - ♦ We might have to come back quickly
- In case of an unexpected hazard communicate immediately

"ABORT, ABORT, ABORT"







MEDFLIGHT Approach & Departure

CAUTION

- Rotor downwash can blow dirt, debris, and gravel with enough force to cause personal injury or property damage.
 - Helmet with eye protection is essential











GROUND OPERATIONS

- Never approach aircraft unless requested by Flight Crew.
- Do not take patients to Flight Medics let them come to you.
- Never approach the tail!!
- Never open or close any door of the helicopter. (you break it, you buy it!).





MEDFLIGHT Approach & Departure

CAUTION

Operations in and around the aircraft are conducted under stressful and noisy conditions; approaching the aircraft without specific instruction is **NOT** permissible.



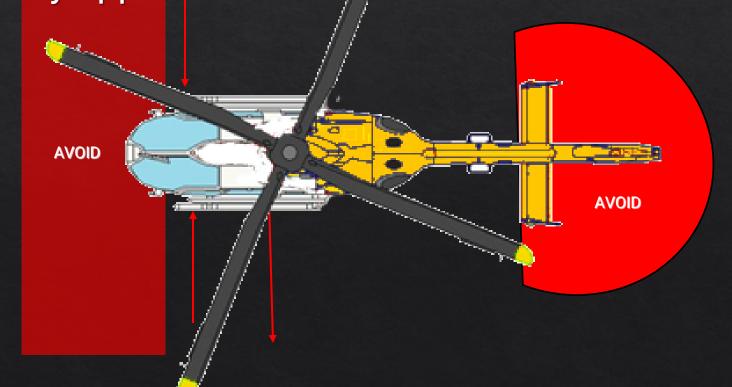




MEDFLIGHT Approach & Departure

CAUTION

 If you are directed to approach the aircraft, only approach from the sides.







MEDFLIGHT Approach & Departure

DEPARTURE

- You will hear engine RPM increase prior to aircraft lifting.
- LZ Commander should move to right front side of Aircraft.
 Do not stand directly in front of aircraft.
- Maintain radio contact on AIR OPS as helicopter lifts off.
- If you observe a safety concern: Immediately announce ABORT and use these hand signals



 Remain on AIR OPS and maintain LZ security for 2 min. in case aircraft has to return for emergency landing



COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT



EMERGENCY ENGINE SHUT-DOWN



COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT Emergency Engine Shut-Down



In case of a crash at or near the LZ it may become necessary for the LZ Commander to perform an emergency engine shut-down of the helicopter.

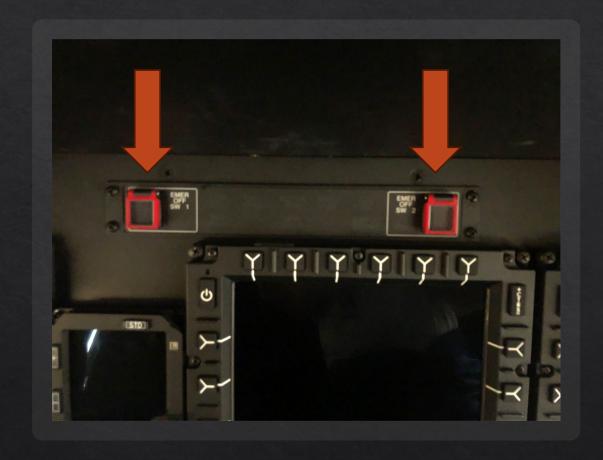
Follow the steps on the following slides for both of our MedFlight helicopter: These steps will vary for other aircraft types and year of manufacture.



COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT



MEDFLIGHT 1







CATA COUNTY

MEDFLIGHT





COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT



NIGHT OPERATIONS





MEDFLIGHT Night Operations





COLLIER COUNTY HELICOPTER OPERATIONS MEDFLIGHT Night Operations



Use your lights to clear the LZ before the helicopter arrives.

Use your lights to clear the LZ before the helicopter arrives.





MEDFLIGHT Night Operations

NIGHT OPERATIONS

- If possible, the LZ should be clearly identified by strobe lights or ground vehicles
- ♦ DO NOT point lights in the direction of the landing zone
- Clearly mark and/or discuss hazards with pilot / helicopter crew prior to landing

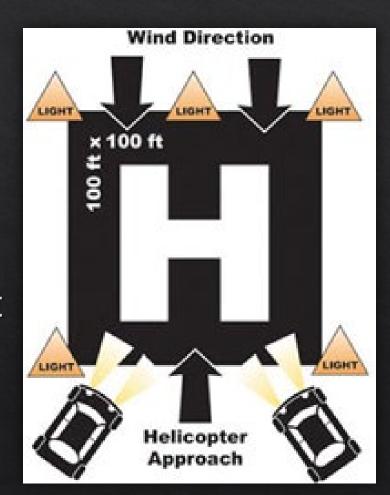




MEDFLIGHT Night Operations

LZ SET-UP

- Set markers (5) on the four corners and 1 marker on the upwind side of the landing area
- Always keep the landing area clear of people/vehicles
- Assure that lights are not pointed at the aircraft
- ♦ 100x100 feet is minimum







MEDFLIGHT Safety Rules

GENERAL SAFETY RULES

- Never approach or allow anyone to approach the aircraft.
- No smoking or open flame within 100 feet.
- No hats or unsecured articles.
- ♦ Never run or hurry.
- No vehicle movement near aircraft.
- ♦ Keep your head/eyes up.
- Notify pilot/flight crew if something is wrong.
- ♦ As LZ Commander you MUST ALWAYS be looking towards the aircraft.

Questions / Comments













Thank You!