Helicopter Use Decisions and Calculations

A Three Step Process for Field Use. There are 2-3 other risk decision trees/logarithms to use with this one.

Step 1/ 3. Short Haul Decision Tree (Adapted by Tim Kovacs from Tom Pendley FOG)
1. Convince yourself why to short haul or hoist rather than why not to short haul or hoist. Justifying its purchase or use is not a good reason.
2. Is an appropriate Aircraft with a qualified pilot available? If no, NO short haul or hoist will be done.
3. Yes: Does weather & lighting permit Special Use ops? If no, no short haul or hoist should be done.
4. Yes: Was Load Calculation done and within acceptable limits? If no, NO short haul or hoist will be done.
5. Yes: Does patient meet any following criteria?
    a. ALOC, Airway Probs, Cardiac Probs, Serious Fx, Fall > 20', Unstable Vitals, Significant MOI
    b. Yes: Short Haul or Hoist only if safe.
    c. No:
        i. Does forecast call for weather deterioration?
        ii. Possible safety problem for a ground evac?
        iii. Ground evac pose extreme risk to rescuers?
        iv. No: Short Haul or hoist only if safe
        v. Yes: Ground evacuation to an LZ or CP.

Step 2/ 3. Rescue Risk Flight Score (Tom Pendley FOG)

	Points	Total
Time:		
Day	1	/
Night	5	/
Wind Speed in Knots (per pilot):		
10-15 knot steady wind = best performance	0	/
0-5 knots	3	/
Gusting more than 10 knots over base speed	add 5	/
Gusting more than 15 knots over base speed	add 10	/
Type of Use:		
Normal	1	/
Special	10	/
Load Calculation (useful load carrying capacity of helo at rescue site):		
> 800 lbs	1	/
600-800 lbs	2	/
400-600 lbs	3	/
200-400 lbs	5	/
Air Temperature:		
< 80° F (27° C)	1	/
80-100° F (27-38° C)	2	/
> 100° F (38° C)	5	/
Total Score:		**/**

If score is 5-10   Lowest Risk
If score is 11-20   High Risk
If score is 21-30   Extreme Risk
If score is >30   No go!

Mountain Rescue Association
Step 3/ 3. Helicopter Load Calculation

Date _____ Time _____

Helicopter Model _____ Agency _____

Pilot _____ Project/ Mission _____

1. Departure base _____   Pressure altitude temperature _____
   (Read altimeter at 29.92)

2. Destination base _____   Pressure altitude temperature _____
   (msl elevation)

3. Helicopter equipped weight ----------------_____
   (empty + accessories for mission + oil)

4. Flight crew weight (Pilot & Observer)-------_____

5. Fuel   (gals.   X 6 lbs AvGas)-_____

6. Operating weight (3+4+5)--------------------------_____

	IGE	OGE
7. Computed gross weight---------------------------- (From X Load Charts)	_____	_____
8. Fixed weight reduction (chart)---------------------------	_____	_____
9. Adjusted weight (7 minus 8)----------------------	_____	_____
10. Takeoff/landing limits (handbook "limitation" section)	_____	_____
11. Selected weight (lowest of 9 or 10 for non jettisonable)	_____	_____
12. Operating weight (line 6)----------------------	_____	_____
13. Allowable payload-------------------------------	_____	_____

14. Passengers and/or cargo
      Name   Weight

   Rescuer: _____   _____

   _____   _____

   _____   _____

   _____   _____

   _____   _____

15. Actual payload (total of 14)---------------------------   _____   _____

16. Actual gross weight (12 plus 15). Must not exceed 11.   _____   _____

Pilot	Helispot Manager

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Helicopter Load Calculation

Complete for all rescue flights. For repetitive flights, one calculation is valid between like points of similar evaluations as long as loads do not exceed that authorized by the calculation for the initial flight, and weather conditions do not change.

Pilot usually completes 1-13. Balance is completed by MCSO MR Helispot Manager or Rescue Leader.

1. Departure Base – Read altimeter when set to 29.92
2. Destination Base – Use MSL/ Elevation
3. Helicopter Equipped Weight – Empty weight of A/C + weight of accessories required for mission + weight of oil.
4. Flight Crew Weight – Weight of Pilot, Flight Officer and Rescuer(s) + their personal gear
5. Fuel - AvGas = 6 lbs/ gal. JP = 7 lbs/ gal
6. Operating Weight – Add 3, 4, and 5
7. Computed Gross Weight – Obtain weight from A/C using HIGE chart using external load chart if available. External Load missions and adverse terrain or adverse weather, etc. flights will be computed from A/C HOGE charts.
8. Weight Reduction – Enter applicable weight reduction for helicopter model as shown in Weight Reduction Chart.
9. Adjusted Weight – 7- 8
10. Takeoff and Landing Limits – Enter applicable Takeoff and Landing Weight Limit as found in Limitations section of Handbook.
11. Selected Weight – If line 9 is greater than line 10, line 9 may be used for jettisonable loads. However, the lowest weight, line 9 or 10, will be used for non-jettisonable loads.
12. Operating Weight – Item 6
13. Allowable Load – The maximum allowable weight (passenger and/or cargo that can be carried for the mission).
14. Passengers and/or Cargo – Enter Passenger Weights and/or type and weights of cargo. Manifest all passengers by name for each flight.
15. Actual Payload – Total of all weights listed in item 14.
16. Actual Gross Weight – The total of weights in items 12 and 15. Must not exceed line 11.

Weight Reduction Chart

Model	Weight	Model	Weight
AS-350D	130	212	390
SA-315B	180	214 B1	380
SA-316B	170	**407**	**See Glennie W&B Sheet**
SA-318C	80	UH-12E	90
SA-319B	210	UH-12 Soloy	100
47G3B/ -1/ -2	90	FH-1100	100
47G-Soloy	120	H-500C	110
204B	200	H500D	120
205 A1	260	BO-105C 250 C20	150
206 B3	130	BO-105C 250 C20B	180
206 L1	150	S55T	170
206 L3			