

**PREFLIGHT CHECK****From Nose to the right****STATION 1**

- |                                   |                                |
|-----------------------------------|--------------------------------|
| - Transparent panels              | Condition – Cleanliness        |
| - MGB Engine oil cooler air-inlet | Check no obstruction or debris |
| - Side slip indicator             | Condition                      |
| - Pitot tube                      | Cover removed – condition      |
| - Landing & search lights         | Condition                      |
| - Mirror                          | Mount, condition               |
| - Lower cable cutter              | Condition                      |

**STATION 2**

- |                                     |  |
|-------------------------------------|--|
| - Front door                        | Condition, jettison system CK  |
| - Sliding door                      | Condition, closed or open locked                                     |
| - Left cargo door                   | Open   |
| - Loads and objects carried         | Secured  |
| - Left cargo door                   | Closed, locked   |
| - Fuel tank and system              | Filler plug closed-Tank sump drained<br>if OAT >0°C, check for leaks |
| - MGB cowl                          | MGB oil level – Cowl locked  |
| - Hydraulic oil level               | Check reservoir level  |
| - All lower fairing panels          | Locked   |
| - Landing gear, foot step, bear pad | Secure – Visual check  |
| - Static ports                      | Clear, covers removed  |
| - OAT sensors, antennas             | Condition  |
| - Main Rotor Head and blades        | Visual inspection, no impact   |
| - Engine air-Intake, sand filter    | Clear (water, snow, foreign object)                                  |
| - Engine cowl                       | Locked   |
| - Rear cargo door                   | Open   |
| - Loads and objects carried         | Secured  |
| - Rear cargo door                   | Closed, locked   |
| - ELT                               | Arm (monthly check 10-4)   |
| - Oil drain                         | No oil under scupper   |

### STATION 3

- |                                    |                                      |
|------------------------------------|--------------------------------------|
| - Heat shield on tail drive        | Condition, attachment                |
| - Tail boom, antennas              | Condition – Fairings fasteners lock  |
| - Battery                          | 1/2 switch over, door closed, locked |
| - Stabiliser, fin, external lights | General condition                    |
| - Tail rotor duct and blades       | Condition, no impact                 |
| - Tail rotor head fairing          | No rotation (paint marks)            |
| - Keel and tail skid               | Condition, attachment                |

### STATION 4

- |                                    |                                     |
|------------------------------------|-------------------------------------|
| - Yaw control rod                  | Secured                             |
| - TGB                              | Oil level                           |
| - Stabilizer, fin, external lights | General condition                   |
| - Tail boom, antennas              | Condition – Fairings fasteners lock |
| - Heat shield on tail drive        | Condition, attachment               |

### STATION 5

- |                                     |   |
|-------------------------------------|---|
| - Oil drain                         | No oil under scupper                                |
| - EPU door                          | Closed or EPU plugged-in                            |
| - Engine cowl                       | Locked  |
| - Right cargo door                  | Open  |
| - Loads and objects carried         | Secured   |
| - Right cargo door                  | Locked  |
| - Main rotor head and blades        | Visual inspection, no impact                        |
| - MGB cowl                          | No foreign object on transmission deck. Cowl locked |
| - Hydraulic oil level               | Check reservoir level                               |
| - Engine oil level                  | Check reservoir level                               |
| - Landing gear, foot step, bear pad | Secure – Visual check                               |
| - All lower fairing panels          | Locked  |
| - Door                              | Condition, jettison system check                    |

## INTERIOR CHECK

- |                               |                                   |
|-------------------------------|-----------------------------------|
| - Cabin                       | Clean                             |
| - Fire extinguisher           | Secured – Checked                 |
| - Torch lamp                  | On socket                         |
| - Fuses/breakers              | All set                           |
| - Loads and objects carried   | Stowed and secured                |
| - Front doors jettison system | Checked – Plastic guard condition |

## TURNAROUND CHECK

- |                              |   |
|------------------------------|---|
| – Overall aspect             | Condition, cleanliness                  |
| – Engine / MGB / TGB         | Oil level                               |
| – Hydraulic oil level        | Check reservoir level                   |
| – Main and tail rotor blades | Condition                               |
| – Loads                      | Secured                                 |
| – All cowlings               | Closed & locked                         |
| – Doors                      | Closed or open-locked<br>(sliding door) |
| – Fuel sump drain valve      | No leak                                 |

## NOTE

If the aircraft is to be parked some time between flights, temporary picketing is recommended by fitting blanks, covers and blade socks in winds above 40kt

In this case, perform a complete PREFLIGHT CHECK

# START UP <sup>4.3</sup>

## ENGINE PRESTART CHECK

- |                                  |  |
|----------------------------------|--|
| - Seats and control pedals       | ADJUSTED   |
| - Seat belts                     | FASTENED   |
| 1 Rotor brake                    | RELEASED (fully fwd)                                 |
| 2 Fuel shut-off lever            | FORWARD (plastic guard)                              |
| 3 Twist grip                     | IDLE detent  |
| 4 EMER SW                        | ON, LOCK-WIRED                                       |
| 5 Starting selector              | OFF  |
| 6 SCU TEST                       | COMPLETE   |
| 7 BAT / EPU                      | ON   |
| DCT BAT                          | ON   |
| GEN                              | ON   |
| 8 AVIONIC                        | ON   |
| 9 Lighting circuits 1 and 2 test | COMPLETE ( <i>night flight</i> )                     |
| 10 Electrical mirror             | SET ( <i>to avoid dazzling during night flight</i> ) |
| 11 W/LT TEST                     | COMPLETE   |
| 12 FIRE TEST                     | COMPLETE   |
| 13 SERVO TEST                    | SERVO when depressed                                 |
| 14 CWP lights                    | CHECK :  |

- \* With BATT power ..... **GENE**    **PITOT**    **ENG P**  
**FUEL P**    **HORN**    **MGB P**  
**SERVO**    **HYDR**    **TWT GRP**
- \* With EPU power ..... same as above + **BATT**

- |                   |   |
|-------------------|---|
| 15 VEMD           | 3-data page DISPLAYED<br>Vehicle page DISPLAYED<br>Battery voltage > 22 V<br>Bleed valve open DISPLAYED |
| 16 Control pedals | Freedom travel, then NEUTRAL  |

Includes the full original FM check-list **revised 22.01.2013**, added of special points relative to the implementation of additional avionic, auto-pilot and more.

- 17 Cyclic pitch
- 18 Collective pitch
- 19 Heating, demisting, A/C
- 20 ICS
- 21 NAV/COM 1
- 22 Headphones

CENTER, friction = AP !  
 LOCKED  
 OFF  
 Set crew/all/ISO  
 ON, check ATIS & TWR  
 ANR ON, volume CK

## ENGINE STARTING

- 1 A/COL LT
- 2 CWP
- 3 FUEL P  
*after 30sec...*
- 4 Starting selector
- 5 Engine parameters

ON (should remain ON)  
 CHECK **GOV**  
 ON

ON  
 CHECK

- **NG** increases
- **T4** below limits
- **Rotor** turning **Ng 25 %**
- **Eng oil** pressure increases
- **FLI** activates

*When Ng 60 %*  
*When Ng 67 %*

- 6 CWP

CHECK :

**ENG P** **MGB P** **HYDR**  
**SERVO**

- 7 PITOT
- 8 FUEL P
- 9 SERVO TEST

ON **PITOT**  
 OFF **FUEL P**  
**SERVO** when depressed

- 10 Starting selector guard

SET

11 All necessary systems

ON – TESTED

- SFD
- TAS
- AUTO TRIM
- MT
- MIRROR

12 EPU if connected

DISCONNECT, check door closed and locked

13 CWP

CHECK **GENE** , **BATT**

## RUN-UP CHECK

1 Twist grip

*when NR > 340 rpm*

FLIGHT detent

2 HORN

ON

3 NR

Lower green range

4 CHECK

All lights **green**, no **warning**

Voltage and current

Engine oil pressure

5 AP

PITCH ON

ROLL ON

6 AUTO-TRIM

ON

6 Sand Filter

ON / OFF test functionality

7 G500

Synthetic vision ON

Altitude warning inhibit

## CRANKING

See end of CHECK LIST

# TAKEOFF

## BEFORE TAKEOFF CHECK

- |                                   |                          |
|-----------------------------------|--------------------------|
| 1 Doors                           | CLOSED or<br>OPEN LOCKED |
| 2 Cyclic and collective frictions | AS REQUIRED              |
| 3 Landing light                   | AS REQUIRED              |
| 4 Temperatures and pressures      | NORMAL RANGE             |
| 5 Warning panel                   | All lights OFF           |
| 6 Fuel quantity                   | CHECK                    |
| 6 Collective pitch                | UNLOCKED                 |

## BEFORE TAKEOFF BRIEFING

- |                             |                     |
|-----------------------------|---------------------|
| 1 Available power           | IGE / OGE (W&B)     |
| 2 In case of engine failure | Procedure / Heading |
| 3 Taxi procedure to         | FATO or Rwy         |

## HOVER CHECK

- 1 All green, No warning
- 2 Check needed power IGE

## CLIMB CHECK

- |                        |                          |
|------------------------|--------------------------|
| 1 Max Continuous Power | Max green (MCP)          |
| 2 Vy above 100ft/gnd   | 70 kt (-1 kt per 1000ft) |
| 3 Engine parameters    | CHECK                    |
|                        | Noise sensitive areas    |
|                        | Anti-noise procedure     |

## CRUISE CHECK

Fast cruise	95 % / reaching limit green-yellow <u>Beware of LIMIT if alone !</u>
Eco cruise	80 % best or 10 % below MCP 10'000ft/ASL for best fuel consum...
Turbulences	Reduce IAS
FUEL	CHECK Consumption FUEL quantity
Engine parameters	CHECK

## APPROACH BRIEFING

1 Destination	Airfield or In the field (FATO?)
2 Power request	IGE or OGE
3 DZ	Details Airport VAC chart Details for field landing, reco
4 Approach	Choose and recap Procedure
5 Who does what	PIC / SPIC or additional CM
6 Passenger	Briefing

## APPROACH CHECK

1 Fuel	Quantity
2 Engine parameters	CHECK
3 Warning lights	All green, no warning
4 Landing light	ON
5 Sand filter	ON <u>request</u> (Airco OFF)



## **DECISION**

According **weather** situation / available **power**  
According a **GA** possibility ...or not

Land or Go Around

## **FINAL CHECK**

- 1 Speed
- 2 100ft/gnd
- 3 Power

Vy reducing  
Reduce speed to IGE  
CHECK IGE value

## **LANDING**

- 1 AP

gentle touch-down  
(beware winter ops !)

Pitch OFF  
Roll OFF

## **ENGINE AND ROTOR SHUTDOWN**

- 1 Cyclic stick
- 2 Collective pitch
- 3 Twist grip
- 4 Engine oil cooling
- 5 Pitot, Horn, Landing light
- 6 Non required systems
- 7 Starting selector
- 8 GEN

NEUTRAL (slightly fwd  
against strong wind)

LOCKED  
GND Idle / HW Flight Idle  
30sec  
OFF  
OFF  
OFF position  
OFF

- 9 Rotor brake

APPLY

- NR <140 normal  
- NR 170max (strong wind)

- 10 Anti-collision light

**Should remain ON**

- **BEFORE LEAVING THE HELICOPTER**

11 VEMD *send TECH\_LOG to [info@ben-air.ch](mailto:info@ben-air.ch)* Flight number  
Ng >60 % till Ng <50 %  
Advisory messages...

12 DCT BAT/BAT EPU OFF

13 Pitot, Air-Intake and Exhaust covers, blade socks as required.  
*See Extreme Weather Conditions here after...*

## **CRANKING**

After an aborted start or for check or maintenance purposes only.

1 Start selector	OFF
2 Emergency fuel shut-off lever	<b>FORWARD</b>
3 Ng	check < 10 %
4 FUEL P	<b>ON</b>
5 CRANK	PRESSED 20sec max
6 CRANK	OFF
7 FUEL P	OFF

## **AP CHECK**

Remember...

AUTO TRIM	ON (always) = coupled
SAS mode	TRIM REL depressed

## TRIM FAIL TEST

GYRO Light	OUT
CYCLIC Friction	Fully released
TRIM REL	OFF (out)
AUTO TRIM ON	ON (depressed)
PITCH axis	ON
ROLL axis	OFF
TRIM TEST	Press and hold. TRIM illuminates after 7sec Cyclic moves slowly fwd
PITCH axis	OFF
ROLL axis	ON
TRIM TEST	Press and hold. TRIM illuminates after 7sec Cyclic moves slowly left
PITCH axis	ON

## **AP Service Bulletin**

**Number: Revision: Date: ATA System: 2210 AutoPilot system**

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2210-10-SB002  
22<sup>nd</sup> December 2011

**SUBJECT: Sagem AP85 AutoPilot – Application of Friction on Pilot Cyclic Stick**

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This service bulletin informs operators that excessive play in the friction cups caused by over-loosening of the friction nut can cause the cyclic stick to jam in flight. Operators are warned to avoid such settings on the cyclic friction.

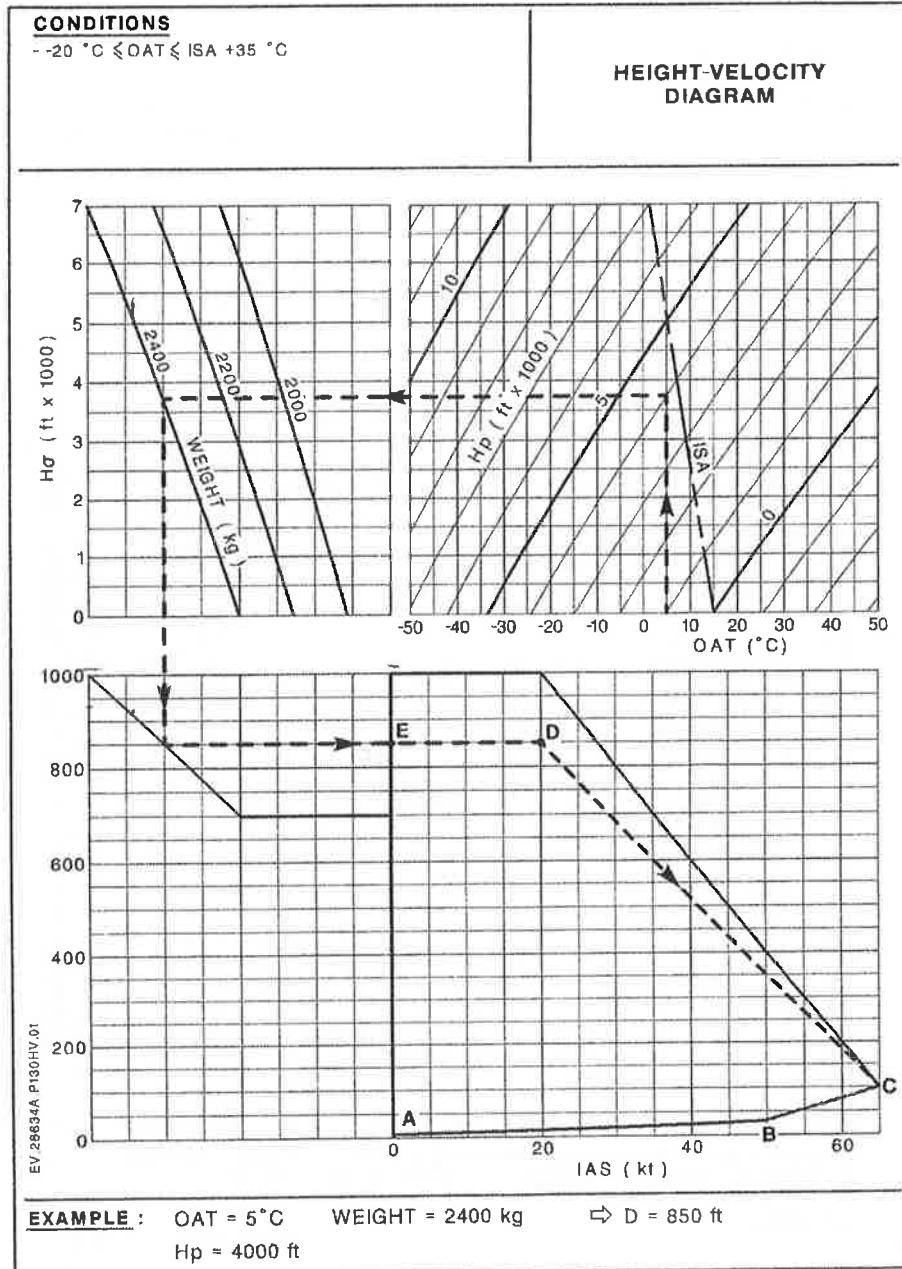
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# IN FLIGHT TESTED

## PERFORMANCES / CONSOMMATION HORAIRE

Ground idle		70lts		
1750ft	75%	140lts		
2000ft	70%	125lts	11°C	110kts
2000ft	95%	217lts	1°C	136kts
2000ft	88%	200lts		135kts
2200ft	80%	210lts		122kts
4200ft		180lts	5°C	120kts
4800ft	80%	170lts	5°C	115kts
6000ft	80%	165lts		112kts
6500ft	80%	162lts	6°C	115kts
6500ft	95%	192lts	6°C	125kts
7380ft	70%	105lts	9°C	100kts +
8500ft	80%	152lts		95kts
9000ft	80%	150lts	2°C	106kts
9000ft	95%	180lts	2°C	121kts
10000ft	90%	127lts	7°C	120kts

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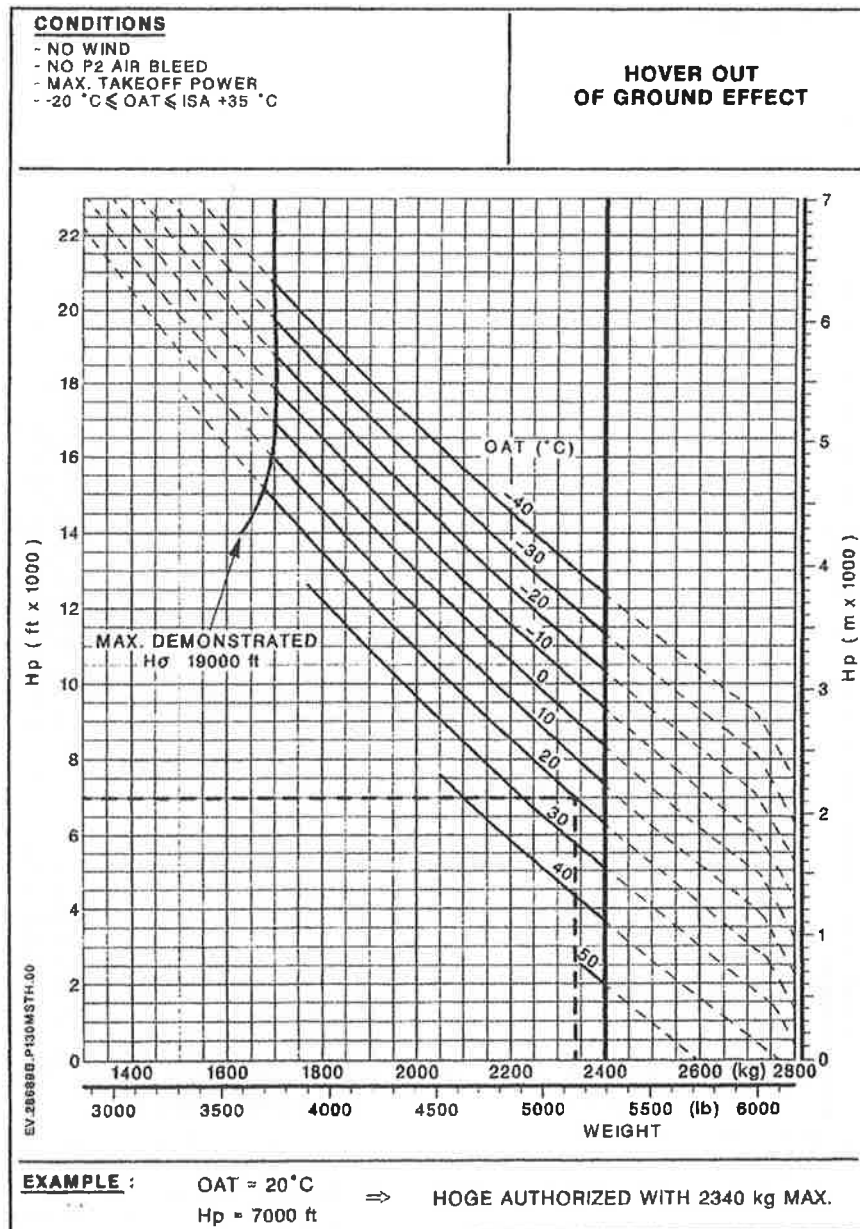


**Figure 5 - 4**

**DGAC APPROVED**  
**REVISION 1**

Includes the full original FM check-list **revised 22.01.2013**, added of special points relative to the implementation of additional avionic, auto-pilot and more.

## 5.7 HOVER OUT OF GROUND EFFECT



**Figure 5 - 6**

**DGAC APPROVED  
ORIGINAL ISSUE**

**5 - 9**

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## 5.6 HOVER IN GROUND EFFECT

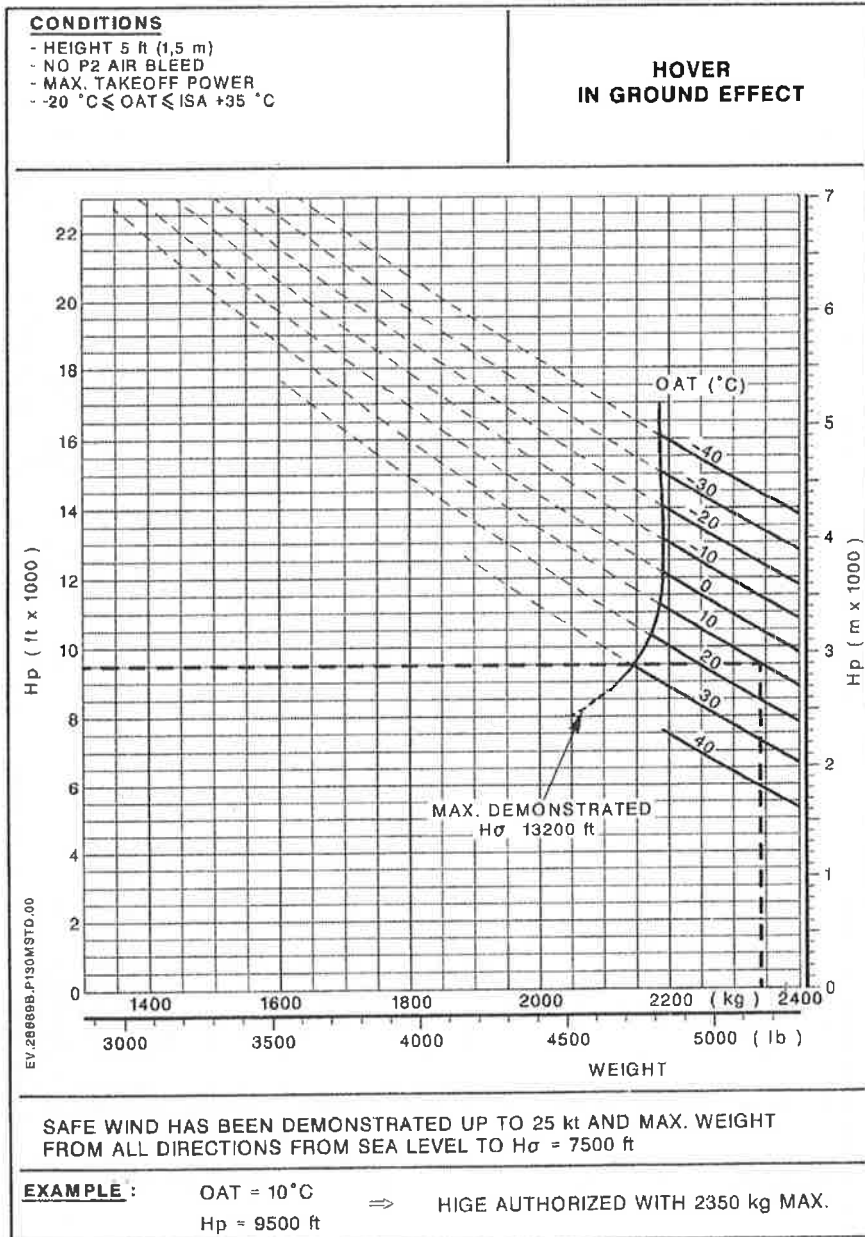
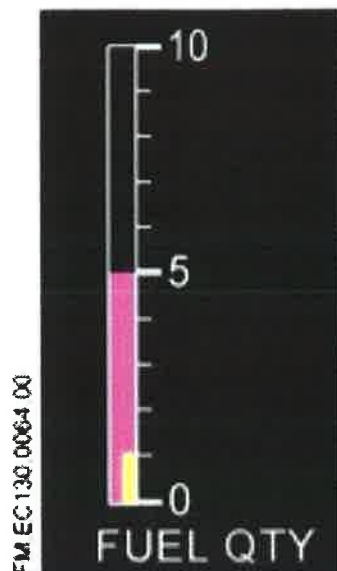


Figure 5 - 5



## REMEMBER... FUEL GAUGE

- **Fuel gauge**



10 = 538.7 litres (426 kg)(142.3 US gal)  
(938 lb) usable fuel quantity.

15 min of flight time remains at MCP at the beginning of this range.

### NOTE 1

The unusable fuel quantity is reached when zero is indicated on the fuel gauge.

### NOTE 2

Fuel quantity indication in kg and fuel flow indication in kg/h is based on a fuel density of 0.79 kg/l.

# REMEMBER... EXTREME WEATHER

## 4.10 EXTREME WEATHER OPERATIONS

### 4.10.1 HIGH WIND OPERATION (WIND ABOVE 30 KT)

- **Parking**

- Park the helicopter head into the wind. Maintain rotor brake applied with one blade at 12 o'clock. Keep blade socks until start up.
- For wind above 40 kt the helicopter must be tied down.

- **Start up**

- When the rotor begins to turn, push the cyclic stick slightly into wind.
- As soon as  $N_g > 67\%$  :  
Twist grip ..... FLIGHT detent.

- **Engine and rotor shutdown**

- Perform engine oil cooling with twist grip in FLIGHT position.

#### NOTE

**Start up and shut down have been demonstrated up to 40 kt of wind from any directions and for 50 kt-headwinds.**

# File:Windchill chart.GIF

From Wikipedia, the free encyclopedia

File File history File usage

