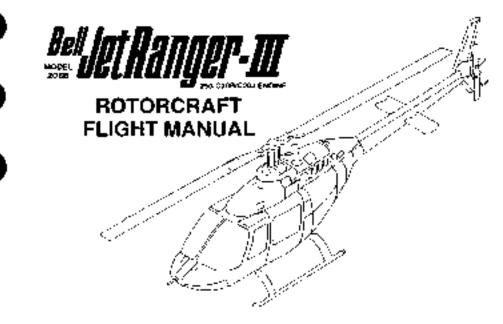
BHT-206B3-FM-1



THIS MANUAL SHALL BE IN THE HELICOPTER DURING ALL OPERATIONS

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NOTICE PAGE

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FUEL SHUTOFF VALVE

NOTICE

These Temporary Supplementary pages provide approved Flight Manual data for the compliance of Bell Helicopter Alert Service Bulletin 206-82-18.

NOTE

Do not remove pages from Basic Flight Manual. Insert Temporary Supplementary pages opposite corresponding Basic Flight Manual pages.

When fuel shutoff valve plumbing has been installed in accordance with Bell Helicopter Alert Service Bulletin 206-82-18, remove temporary pages from Flight Manual.

LOG OF TEMPORARY PAGES

THIS PAGE IS IN CONJUNCTION WITH THE FUEL SHUTOFF VALVE PROVISION FOR THERMAL RELIEF. REFER TO BELL HELICOPTER ALERT SERVICE BULLETIN 206-82-18. WHEN THE FUEL SHUTOFF VALVE PLUMBING HAS BEEN INSTALLED IN ACCORDANCE WITH BELL HELICOPTER ALERT SERVICE BULLETIN 206-82-18, REMOVE TEMPORARY PAGES FROM FLIGHT MANUAL.

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MANAGER

ROTORCRAFT CERTIFICATION OFFICE FEDERAL AVIATION ADMINISTRATION FT. WORTH, TEXAS 76193-0170

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NOTE

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GENERAL INFORMATION

ORGANIZATION

The Rotororall Flight Manual is divided into four sections and Appendix A as follows:

- 5ection 1 LIMITATIONS
 - Section 2 NORMAL PROCEDURES
 - Section 3 EMERGENCY AND MALFUNCTION PROCEDURES
 - Section 4 PERFORMANCE
 - Appendix OPTIONAL EQUIPMENT A SUPPLEMENTS
 - Sections 1 through 4 contain DOT approved date necessary to operate the basic helicopter in a sate and afficient manner.

Appendix A contains a liet of approved supplements for optional equipment, which shall be used in conjunction with the basic flight Monual when the respective optional equipment kits are installed.

The Manufacture 's Data Manual (BHT-2058 3-MD-1) contains additional information to be used in conjunction with the FNgM Manuel and optional equipment supplements, as applicable. The manual is divided into four sections as follows:

Section 1 — WEIGHT AND BALANCE

- Section 2 SYSTEMS DESCRIPTION
- Section 3 OPERATIONAL INFORMATION

Section 4 — HANDLING/SERVICINC/ MAINTENANCE

TERMINOLOGY

WARNINGS, CAUTIONS, AND NOTES

Warnings, cautions, and notes are used throughout this menual to emphasize important and oritical instructions as follows:



AN OPERATING PROCEDURE, PRACTICE, ETC., WMICH, IF NOT CORRECTLY FOLLOWED, COULD RESULT IN PERSONAL INJURY OR LOSS OF LIFE.

CAUTION

AN OPERATING PROCEDURE, PRACTICE, ETC., WHICH, IF NOT STRICTLY OBSERVED, COULD RESULT IN DAMAGE TO OR DESTRUCTION OF EQUIPMENT.

NOTE

An operating procedure, condition, etc., which is essential to highlight.

USE OF PROCEDURAL WORDS

The concept of procedural word usage and intended meaning which has been adhered to in preparing this menual is as (offows:

"Shell" hes been used only when application of a procedure is mendatory.

"Should" has been used only when application of a procedure is recommended. "May" and "need not" have been used only when application of a procedure is optional.

"Whit" has been used only to indicate tuturity, never to indicate a mandetory procedure.

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Section 1

LIMITATIONS

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Section 1

LIMITATIONS

LIMITATIONS

Compliance with the limitations section is required by appropriate operating rules.

Intentional use of transient limits is probibiled.

Turn anti-collision light QFF during flight in or near visible moisture to prevent reflections and possible pilot vertigo. Keep cabin glass clean to prevent halation.

TYPE OF OPERATION

The basic helicopter is approved for five place sealing and is certified for land operation under day or right VFR nonloing conditions.

Flight operations are approved with the landing gear croastube fairings installed or removed.

NIGHT FLIGHT LIMITATIONS

Night flight operation is limited to visual contact flight conditions. Orientation shall be maintained through visual reference to ground objects solely as a result of lights on the ground or adequate selectial illumination

FLIGHT WITH DOOR(S) OFF

All unsecured items must be removed from cabin. Do not exceed Airspeed and Center of Gravity Limitations.

Protracted rearward and sideward flight prohibited.

External Cargo Loading limited to 3350 pounds (1519.6 kilograms) gross weight with any combination of door(s) OFF.

Flight with forward door(6) OFF is prohibited with litters,

FLIGHT WITH OPTIONAL EQUIPMENT INSTALLED

The following equipment shall be installed when conducting flight operations in failing and/or blowing snow to reduce possibility of engine flameout:

The Particle Separator Engine Air Induction System Kit (8HT-20683-FMS-10). Deflector Kit (8HT-20683-FMS-12), and Engine (Automatic) Re-Ignition Kit (8HT-20683-FMS-18).

Refer to appropriate flight Manuel Supplement(s) for additional Limitationa, Procedures, and Parlormance Data.

FLIGHT CREW

The manimum flight crew consists of one pilot who shall operate the helicopter from the right crew uset. The fell crew seat may be used for an additional pilot when the approved duat controls are installed.

ALTITUDE LIMITATIONS

3000 POUNDS (1360.8 KILOGRAMS) GROSS . WEIGHT AND BELOW

Maximum operating — 20,000 feet prossure altitude.

ABOVE 3000 POUNDS (1360 8 KILOGRAMS) GROSS WEIGHT

Maximum operating — 13,500 (est denoty) officiale.

AIRSPEED LIMITATIONS

3,000 POUNDS (1360.8 KILOGRAMS) GROSS WEIGHT AND BELOW

Vne 150 MPH IAS (130 KIAS) sea level to 3,000 leal density attitude. Decrease Vne 4.0 MPH IAS (3.5 KIAS) per 7,000 feet above 3,000 feet density attitude. Maximum prossure attitude — 20,000 faet.

ABOVE 3,000 POUNDS (1360.8 KILOGRAMS) GROSS WEIGHT

Vine 140 MPH IAS (122 KIAS) see level la 3,000 feel dénsity elititude. Decrease Viné 8.0 MPH IAS (7 0 KIAS) per 1,000 feel above 3,000 feet dénsity attitude. Maximum density attitude — 13,500 feet.

Refer to Airspeed Placard for Indicated Airspeed (IAS).

SS TO 100% TORQUE TAKEOFF POWER Range

Vine 92 MPH IAS (80 KIAS).

AFT DOOR(S) OFF

Vie 100 MPH IAS (87 KIAS) power ON of OFF.

FORWARD DOOR(S) OFF

Vine BO MPH IAS (69 KIAS) power ON of OFF.



AFRSPEEDS IN EXCESS OF AIRSPEED LIMITATIONS DOOR(S) OFF WILL CAUSE CYCLIC FORE AND AFT STICK REVERSAL AND FUSELAGE BUFFETING.

WEIGHT LIMITATIONS

CAUTION

LOADS THAT RESULT IN GROSS WEIGHTS AGOVE 3200 POUNOS SHALL BE CARRIED ON THE CARGO NOOK AND SHALL NOT BE IMPOSED ON THE LANDING GEAR.

Maximum gross weight for tekacif and lending:

Internet — 3200 pounde (1451.5 kilograms).



External — 3350 pounds (1519.5 |alograms].

FRONT SEAT WEIGHT

Minimum — 170 pounds (77.1 kilograms).

NOTE

Ballesi as required to maintain weight empty CG within limits. Refer to Center of Gravity va Weight Empty chart in BNT-20683-MM-1.

LONGITUDINAL CENTER OF GRAVITY LIMITS

Center of gravity limits are from station 106.0 (2692.4 millimeters) to 114.2 (2900.7 millimaters); however, the aft limits are variable depending upon gross weight. After to Center of Gravity vs Gross Weight. Chert (figure 1-1) and BHT-206B3-MD-1.

NOTE

Station 0 (datum) is located 55.15 inches (1401.1 millimeters) lorward of forward jack point contention.

DOOR(S) OFF

No change from basic helicopter CG with only the alt cable door(a) OFF.

- Center of gravity (imits are from station 105.0 (2692.4 millimeters) to 110.0 (2794.0 millimeters) with one or both forward door(s) OFF or any combination of forward and aft cabin door(s) OFF.
- Actual weight change shall be determined siter doors, etc., have been removed and ballout readjusted, if necessary, to return ampty weight center of gravity to within silowable limits.

LATERAL CENTER OF GRAVITY LIMITS

3.0 inches (76.2 millimeters) left of helicopter centerline.

4.0 inches (101.6 millimeters) right of helicopter centerline.

NOTE

Lateral CG limits vary depending on longitudinal CG location. Refer to Lateral vs Longitudinal CG limits chart, ligure 1-2.

POWER PLANT LIMITATIONS

ALLISON Model 250-C20B Engine or 250-C20J Engine. The 250-C20B engine limitations contained hersin are applicable to the 250-C20J engine.

POWER TURBINE (N2) OPERATING RPM LIMITS

POWER ON

Minimum — 97%.

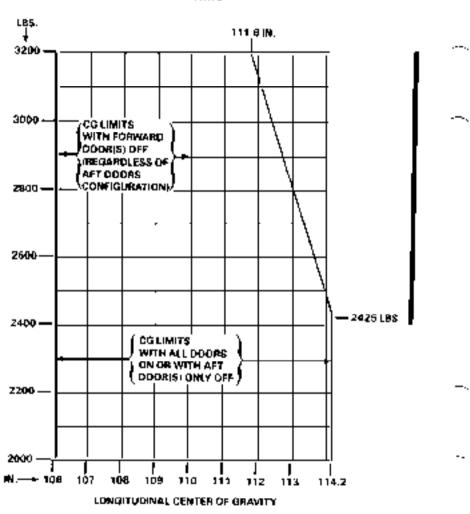
Maximum — 100%.

WARNING

USE OF THE THROTTLE TO CONTROL RPM IS NOT Authorized. (Aefer to Section 3, Emergency and Malfunction procedures For exception.)

N2 TRANSIENT OVERSPEED LIMITS

Refer to figure 1-3.



CENTER OF GRAVITY VS GROSS WEIGHT ENGLIGH WINTS

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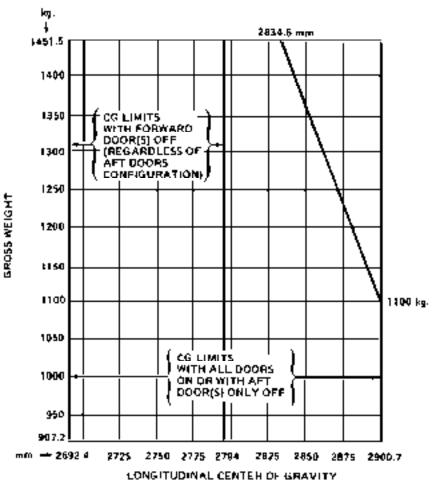
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Figure 1-1. Center of gravity vs gross weight (Sheet 1 of 2)

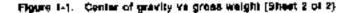
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CENTER OF GRAVITY VS. GROSS WEIGHT METRIC UNITS



1-7

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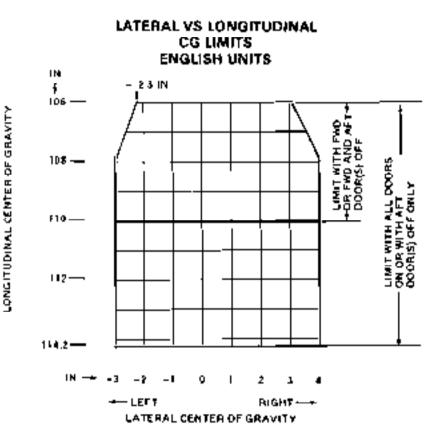


Figure 1-2. Lateral vs longitudinel CO Breits (Sheet 1 of 2)

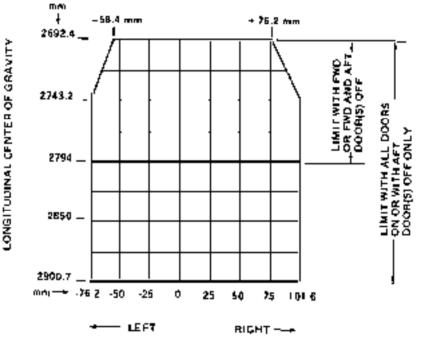
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<u> 1</u> -

LATERAL V\$ LONGITUDINAL CG LIMIT\$ METRIC UNITS



LATERAL CENTER OF GRAVITY

Figure 1-2. Leteral valiongitudinal CG limits (Sheet 2 of 2)

GAS PRODUCER (N1) RPM LIMITS

Maxhmum — 105%.

Transient 106% (maximum of 15) seconds).

TOROUE LIMITS

Taksoff — 100% (5 minute limit).

Transfent — 710% (5 second limit. Intentional use prohibited).

Maximum Continuous — 85%.

TURBINE OUTLET TEMPERATURE (TOT) LIMITS

Takaoff = 010°C (5 minute limit).

Maximum Continuous — 738°C

During Power Translant 810 to 843°C (6 saconds maximum, intentional 986 prohibited).



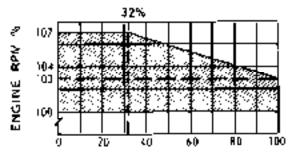
EXCEEDING THE LIMITS OF BID'C TOT OR 100% TORGUE MAY CAUSE N1 TOPPING WITH RESULTANT ROTOR CROOP.

During Starting and Shutdown — \$10 to 927°C (10 seconds maximum).

Some helicopters are equipped with a red warning light on the TOT gage. The light illuminates when either of the following conditions are exceeded:

\$12 to \$27°C for 10 seconds.

927°C or higher for 1 second



ENGINE TORQUE %

N2 TRANSIENT OVERSPEED LIMITS 15 SECONDS MAXIMUM. SHADED AREA REPRESENTS ALLOWABLE OVERSPEED.

Figure 1-3. N2 transfert overspeed NMII6

Some helicoptars are equipped with a red warrung light with or without gage marked at 999°C on TOT.

ENGINE OIL PRESSURE LIMITS

Minimum — 50 PSI.

Below 78.5% Gas Producer APM — 50 PSI Minimum.

Bolween 78.5 and 94.2% Gas Producer PPM — 90 PSI Minimum.

Above 94.2% Gas Producer AP61 --- 118 PSI Minimum.

Max(mum — 190 PSI,

ENGINE OIL TEMPERATURE Limits

Continuous operation - 0°C to 107°C.

Meximum — 107°C.

FUEL PRESSURE LIMITS

Minimum - 4.0 PSI.

External Power

.--

Maximum - 30 0 PSI.

Fuel boost pumps shall be OH during normal engine operations.

ENGINE STARTER LIMITATIONS

Limit starter energizing time to the toRowing:

Ballery

25 Seconds — QN 40 Saconds — ON 30 Saconds — OFF 60 Seconds — OFF 25 Seconds — ON 40 Seconds — ON 30 Seconds — OFF 60 Seconds — OFF 26 Seconds — OF 60 Seconds — OFF 30 Minutes — OFF 30 Minutes — OFF

ÉNGINE ANTI-ICÉ LIMITATIONS

Engine anti-Ice shall not be used in ambient temperatures above 4.4°C (40°F).

Engine anti-loing shall be ON for flight in visible moisture in temporature below 44°C (40°F).

TRANŠMIŠŠIONO IL LIMITATIONS

OIL PRE\$\$URE

Minimum	— 30 PSI
Continued# operation	— 30 te 50 PSI
Maarmum	— 70 PSI

OIL TEMPERATURE

Continuede operation	— 15 to 110°C
Mu simum	- 110°C

ROTOR (NR) LIMITATIONS

POWER ON

Minimum — 97%.

Maximum — 100%.

NOTE

Transient rotor RPM droop down to 95% is permitted but should not exceed 5 seconds.

Rev. 3 1-11

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60% to 60% — Accelerate through this range of rapidly 66 practical with cyclic control in neutral.

POWER OFF

Minimum - 90% rotor APM.

Maalmum — 107% rotor RPN.

LOADMETER LIMITATIONS

Maximum — 70%.

FUEL LIMITATIONS

Turbine fuel ASTM-D 1855, Type B, or Mit-T-3524, Grade JP-4, may be used at all ambient temperatures.

Operation with turbine tuble ASTM-D 1855, Type A or A-1, ML-T-5624, Grada JP-8 or MIL-T-80100, Grade JP-8 is limited to ambient temperatures of -18°C (0°F) or above unisas helicopter is equipped with a fuel pressure gage which has a red triengle marking at 8 PSI (ligure 1-4).

Helicopters equipped with a fuel pressure gage which has a red triangle at 8 PSI (figure 1-4) may operate with furthere fuels ASTM-D 1655, Type A or A-1, MIL-T-5624, Grade JP-5 or MIL-T-03133, Grade JP-6 at temperatures of $-32^{\circ}C$ (-25°F) and above providing fuel pressure is 8 PSI or above.

Helicopters equipped with Airframe mounted tool filter do not require the use of anti-iclog additive at any ambient temperature. Refer to Allieon 280-C20 series Operation and Mainfenance Matual for AVGAS Mia, Cold Weather Fusi, and Biending Instructions.

ENGINE OIL LIMITATIONS

Aircraft turbine engine off. MIL-L-7600, MIL-L-23699, or DOD-L-65734 (AS), (Refer to BHT-20683-MD-1 for that of approved tubricents.)

Operation with MiL-L-23899 and DOO-L-88734 (AS) limited to ambient temperature above -40°C (-40°F).

NOTE

Refer to Altigon Model 250-C20 Operation and Meintenance Manual and BMT-20683-MO-1 regarding mixing of oils of different brands, types, and manufacturers.

TRANSMISSION AND TAIL ROTOR GEARBOX OIL TYPE LIMITATIONS

Oil Type — Mil-L-7608, Mil-L-23698, or DOD-L-86734 (AS)

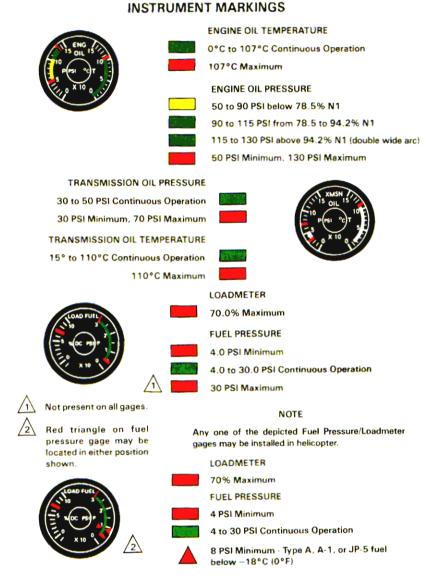
Operation with MIL-L-23699 and DOD-L-95734 (AS) is limited to embient temperatures above -40°C (-40°F).

INSTRUMENT MARKINGS

Refer to figure 1-4.

PLACARDS

Refer to figure 1-5.



20683F-1-4-1

Figure 1-4. Instrument markings (Sheet 1 of 4)





AIRSPEED-KNOTS

0 to 130 Knots (0 to 150 MPH) **Continuous Operation**



130 Knots (150 MPH) Maximum

100 Knots (115 MPH) Maximum for Autorotation





0 to 150 MPH (0 to 130 Knots) Continuous Operation

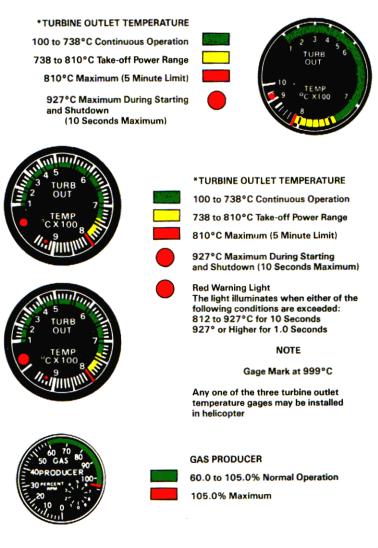
150 MPH (130 Knots) Maximum

AIRSPEED-MPH

115 MPH (100 Knots) Maximum for Autorotation

Figure 1-4. Instrument markings (Sheet 2 of 4)

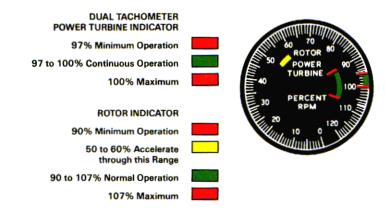
INSTRUMENT MARKINGS



206B3F-1-4-3

Figure 1-4. Instrument markings (Sheet 3 of 4)

BHT-206B3-FM-1



INSTRUMENT MARKINGS



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	19. 19.	

TORQUE

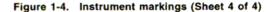
0 to 85.0% Continuous Operation 85.0 to 100.0% Take-off Power Range 100.0% Maximum (5 Minute Limit)



NOTE

Any of the depicted torque indicators may be installed in the helicopter.

206B3F-1-4-4



PLACARDS

2068 AIRSPEED LIMITATIONS MPH- LAS							
3000 LB GW AND BLLOW							
н _р	UAT ^o t						
000 F T	40	40	20	٥	20	40	
D	148	150	150	15 0	150	150	
2	119	141	150	130	\\$ 0	150	
4	129	131	140	149	150	150	
6	114	122	136	P4 0	150	150	
В	10	112	121	130	140	150	
10	100	103	ш	129	130	140	
12	91	93	101	110	120	130	
14		84	32	100	110	120	
16				90	100	110	
1Ĥ					940	100	
20-						90	

Hp is pressure shitude

ABOVE 3000 LB GW							
Fp	OAT ⁹ C						
1000 FT.	46	40	20	D	-20	-40	
Û	136	140	140	140	140	149	
>	112	122	140	140	140	140	
4	98	103	120	139	140	1.40	
6	79	84	101	119	139	740	
3	60	65	BI	99	819	:40	
10			¢.	80	99	120	
19				60	79	100	
14					59	80	
16						54	

Placards required with MPH akspeed indicator installed. Figure 1-5. Placards (Sheet 1 of 4)

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PLACARDS (Cont)

2088 AIRSPECD UMITS- KNOTS HAS								
2068 AIRSPEED LIMITATIONS KNOTS JAS								
3000 LB GW AND BELOW								
н _Р			0A7	·"c				
10 06 FT	46	40	20	0	20	-40		
0	428	130	130	130	130	130		
z	421	122	130	rза	130	130		
4	112	114	lżz	129	130	130		
6	103	106	נוו	122	130	130		
8	9 6	\$ 7	195	113	lżz	130		
10	87	89	9 4	104	113	155		
12	79	81	62	96	104	113		
14		73	80	\$ 7	96	104		
16				78	87	96		
18					78	¢/		
20						78		



 $\underline{\Lambda}$. Since planard may be installed

Hp is pressure altitude

ABOVE 3000 LB GW							
н _р		∩AT- ^a c.					
1009 FT	\$ 6	40	2Q	٥	·Z0	40	
•	וי 🖪	122	122	122	122	122	
2	10Ż	106	122	122	1 22	122	
4	85	89	104	121	122	122	
6	-69	73	88	103	121	1 22	
\$	52	56	70	86	103	122	
10			53	69	9 6	104	
12				52	63	87	
14					51	69	
16						54	

Placards required with KNOTS elispeed indicator installed.

Figure 1-5. Placarde (Sheet 2 of 4)

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PLACARDS (Cont)

The following 2068 Alrepted Limitations placed is installed in heliopoter serial number 3567 and subsequent.

2068 AIRSPEED LIMITATIONS-KNOTS-IAS							
3000 LB GW AND BELOW							
Hp		OAT-°C					
1000 FT	46	40	20	O	-20	-40	
0	128	130	130	130	130	130	
2	121	122	130	130	130	130	
4	112	114	122	129	130	130	
6	[103	106	113	122	130	130	
8	96	97	105	113	122	130	
10	87	89	96	104	113	122	
12	79	8 1	88	96	104	113	
14		73	80	87	96	104	
16				78	87	946	
18					78	87	
20						78	
	ABO	VE 30	00 LE	GW			
н _р			OAT-	-°¢			
1000 FT	46	40	20	0	-20	-40	
0	118	122	122	122	122	122	
2	102	106	122	122	122	122	
4	85	89	104	121	122	122	
6	69	73	88	103	121	122	
8	52	56	70	86	103	122	
10			53	69	86	104	
12				52	69	87	
14					51	69	
16						51	

Figure 1-5. Placerde (Sheet 3 of 4)

DOT APPROVED

-

PLACARDS (Cont)

FWD DOOR(SI OFF VNE 80 MPH (69 kNOTS) C.G. 106-110

(Located on both forward door frame poets)

THIS HELICOPTER MUST BE OPERATED IN COMPLIANCE WITH THE OPERATING LIMITATIONS SPECIFIED IN THE APPROVED HELICOPTER FLIGHT MANUAL

MINIMUM PILOT WEIGHT 170 L68

(These plecents located on the inside of baggage compariment door.)

CARGO MUST BE SECURED IN ACCORDANCE WITH FLIGHT MANUAL INSTRUCTION

MAX ALLOWABLE WEIGHT 250 LBS. MAX ALLOWABLE WEIGHT PER SQ. FT 86 LBS.

Figure 1-5. Piecerds (Sheet 4 of 4)

Education

..-



NORMAL PROCEDURES

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Section 2

NORMAL PROCEDURES

INTRODUCTION

This section contains instructions and procedures for operating the holicopter from the planning singe, through actual flight conditions, to securing the belicopter effer lending.

> Normal and standard conditions are secured in these procedures. Particent data in other sections is referenced when applicable.

> The instructions and procedures contained horein are written for the purpose of standardization and are not applicable to all situations.

OPERATING LIMITATIONS

The minimum and maximum limits, and the normal and cautionary operating ranges for the helicopter and its subsystems are indicated by instrument markings and placards. The instrument markings and placards. The instrument markings and placards represent careful serodynamic calculations that are substantiated by flight test data. Refer to Section 1 for a datafled explanation of each operating limitation.

Anytime an operating limitation is exceeded, an appropriate entry shall be made in the hallcopter logbook. The entry shall state which limit was escended, the duration of time, the extreme value attained, and any additional information essential in determining the meintenance action required.

FLIGHT PLANNING

Each flight should be planned adequately to ensure sele operations and to provide the pilot with the data to be used during llight.

Check type of flight to be performed and destination.

Select appropriate performance charts to be used from Section 4.

TAKEOFF AND LANDING DATA

Refer to Section 1 for takeoif and funding weight (imits and to Section 4 for performance information.

WEIGHT AND BALANCE

Determine prior weight and balance of the helicopter as follows:

Consult applicable weight and belance instructions provided in BMT-20883-MD-1.

Compute takeoff and anticipated landing grose weight, chack helicopter center of gravity (CG) locations, and ascertain weight of luel, all, payload, etc.

Ensure weight and balance limitations light in Bestion 1 have not been acceded.

PREFLIGHT CHECK

The pilot is responsible for determining whether the nelicopter is in condition for

eale llight. Refer to ligure 2-1 for preflight . check sequence.

NOTE

The prollight check is not intended to be a detailed mechanical inspection, but a guide to help the plot check the condition of the helicopier. It may be made as comprehensive as conditions warrent at the discretion of the plict.

All areas checked shall include a visual check for evidence of corrosion, particularly when helicopter is flown near or over solt whier or in areas of high industrial anisyspans.

BEFORE EXTERIOR CHECK

Flight planning — Completed.

Publications — Check.

Enours that the helicopter has been serviced as required.

Settery -- Connected.

EXTERIOR CHECK

1. FUSELAGE - CABIN RIGHT SIDE.

Right stalle port — Condition.

Cabin doors — Condition and security.

Windows — Condition and security.

Landing gear - Condition. Ground handling wheel removed.

2. FUSELAGE — CENTER RIGHT SIDE.

Cabin root, transmission fairing, and angine air inlet area — Cleaned of all debris and accumulated snow and ice.

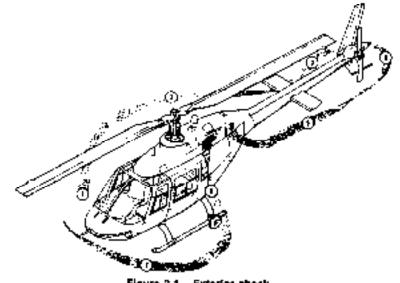


Figure 2-1. Exterior check

HydrauRe reservoir — Oli Javel.

Hydraulie system filter — Bypens Indicator retracted.

Hydraulic ectuators and lines — Condition, security, interference, leskage

Forward fairing — Secured.

Access door - Secured.

TRANSMISSION AREA

Mein driveeheit forwerd coupling — Condition, security, and grease teakage. Check Temp-Pietes (four pieces) for syldence of slovated temperature indicated by dot changing color to black.

CAUTION

IF ANY TEMP-PLATE IS MISSING OR HAS BLACK DOTS , MAINTENANCE PERSONNEL SHALL ASSIST IN DETERMINING AIRWORTHINESS.

Transmission — Oil Jevel and grep for leaks.

Transmission and mounts — Security and condition.

heliation mount - Condition.

Dreg pin — Security and evidence of contact with static stop plate.

Access door - Secured.

Air induction cowing - Secured.

Engine iniet and planum — Condition; citur of obstructions.

> Pusi filler cop — Visoally check level. Secure cap.

> Fuel sump - Drein fuel sample as follows:

FUEL BOOST AFT and FWD alrouth breakers — Out.

BAT switch - On.

FUEL VALVE switch - DFF.

Fuel drain or button — Depress, drain sample, then release.

NOTE

Apply the following procedure to the atrirame (A/P) fuel filter kit and/or engine fuel pump fitter.

A/F (up) fliter (if installed) — Drain and object before first llight of the day as follows:

FUEL VALVE switch - ONL

FUEL BOOST AFT and FWD circuit. broakers — in.

CAUTION LT circuit breaker - in-

Fuel litter drain valve — Open, drain eample, then close.

NOTE

Filter tast switch is localed on top of fund filter.

Fuel filler test switch — Depress and thack A/F FUEL FILTER coulion (ight on. Release switch and check light out.

FUEL VALVE switch — OFF.

BAT switch - OFF.

POWER PLANT AREA

Mein driveshalt forward coupling — Condition, security, and grease teakage. Check Temp-Plates (four places) for evidence of clavated temperature indicated by dot changing color to block.

201101010101010101010	
ECAUTION	

IF ANY TEMP-PLATE IS MISSING Or has black dots . Maintenance personnel Gmall Assist in Determining Airworthiness.

Engine — Condition; security of anachmente.

Engine mounts - Condition and security.

Rev. 7 2-6

Thrattle linkage — Condition, security, and freedom of operation.

Fuel control and governor --- Evidence of leakage.

Hoses and tubing — Chafing, security, and condition.

Exhaust stack and clamp — Security and condition.

Engine cowi — Secure.

Generator cooling scoop -- Clear of debrie.

Right exhaust cover — Removed.

CAUTION

THE ENGINE DIL TANK SIGHT GAGE MOUNTED ON LEFT SIDE IS NOT INDICATIVE OF ACTUAL OIL QUANTITY. OIL QUANTITY Shall be checked with Dipstick.

Oil tank ---- Oil favel, looks, security, and cap secure.

Access door — Secured.

At Isiring — Secured.

3. FUSELAGE — AFT RIGHT SIDE.

Fuselage Condition.

Tell rotor driveshalt cover — Condition and secured.

Teliboom — Condition.

Norizonial stabilizer and position light. Condition and escurity.

Main rotor blade — Condition.

4. FUSELAGE — FULL AFT.

Yertical fin — Condition.

Tail rotor guard — Condition and security.

Anti-collision light Condition.

Att position light -- Condition.

Tall rolo: gearbox — Oil level, leaks and security.

Tail rolor — Thedown removed, condition and free movement.

Tall rotar controls — Condition and security.

Tail rotor blade — Condition, Tip block for river damage, corrosion, and seal condition.

5. FUSELAGE — AFT LEFT SIDE.

WARNING

FAILURE TO REMOVE ACTOR TIECOWNS BEFORE EMGINE STARTING MAY RESULT IN SEVERE DAMAGE AND POSSIBLE INJURY.

Mein rolor biede — Tiedown removed; cendillion.

Tellboom — Condition.

Tail rolor driveshaft cover — Condition and secured.

Horizonial stabilizer and position light — Condition and socurity.

Fuelage - Condition.

Begginge compariment — Cargo (led down; door meaure.

FAA APPROVED



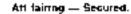
Forward tail rotor driveshalt coupling --Condition of splined adapter and freedom of rotation of witness pip (if installed).

Oil cooler blower shalt hanger bearings — . Grease leakage and overheating,

Oll cooler blower — Clear of obstruction and condition.

Oil cooler — Condition and leaks.

Oil cooler access door - Secured.



Left exhaust cover - Removed.

POWERPLANT AREA

Engine Condition; security of attachments.

Engine mounts — Condition and security.

Exhaust stack and clamp — Condition and security.

Evidence of fuel and oil leaks.

Hoses and tubing for chairing and condition.

Linear actuator and governor control inkage — Condition and security.

Engine anti-ice valve and linkage. Condition and security.

Tail rotor draveshatt — Condition of splines, couplings and freedom of movement.



Engine cowling — Secured.

Air induction cowling — Secured.

Engine intel and planum — Condition; clear of obstruction. TRANSMISSION AREA

Transmission and mounts — Condition and security; area for leaks.

Isolation mount - Condition.

Access dow - Secured.

6. FUSELAGE — CABIN LEFT. Side.

Cabin root, fransmission fairing, and engine air intet area — Cleaned of all debris and accumulated snow and its.

Rotor head reservoirs (pil lubricated) — Visible oli levela.

Main rotor hub and yoke — Condition and cracks.

Pileh horn trunnion bearing — Wear and security.

Main rotor pitch links — Condition, cracks, and security of attachment bolts and locking hardware.

Swashplete assembly - Condition, security of attached controls, and boot condition.

Control linkages to ewashplate — Condition, security of ettachment bolts, and locking hardware.

Forward fairing and access door --Secured

Cabin doors - Condition and accurity.

Windows - Condition and security.

Landing gear — Condition, Ground, handling wheel removed.

Laft stalle port - Condition.

FUSELAGE — FRONT.

Exterior surfaces Condition.

Windshield — Condition and cleaniness.

Battery and vent lines — Condition and security.

Battory access door - Secured,

Pilot lube — Cover removed, clear of obstructions.

Exitinal power door - Condition and security.

Landing light glass — Condition.

Antennas — Condition and security.

Main rotor blade - Condition.

External power -- Connect (if desired).

INTERIOR CHECK

Cable interior Cleanliness and security of aquipment

Fire extinguisher — Security and condition.

First aid kit - Secure (if installed).

Copilol controls (if installed) — Security and proper unstallation.

Copilot seat bell - Secured (if solo).

Cabin loading After to BHT-20683-MD-1,

Cabin doors Secured.

ENGINE PRESTART CHECK

NOTE

Helicopters served number 3567 and subsequent are equipped with ENGINE ANTI-ICING and NYORAULIC SYSTEM switches. On helicopters prior to this, switches are placarded ENGINE DE-ICING and CONTROL BOOST. Paspectively.

Flight controls — Release fraction; check freedom of movement and adjust to (cyclic) neutral/(collective) flat pitch position and pedals neutral.

Throule — Check freedom of full travel and flight idle stop operation. Check copilot throttle if installed. Return to closed position.

LDC LTS switch OFF.

ENGINE DEJOING OF ENGINE ANTI-ICING switch - OFF.

CONTROL BOOST or NYDRAULIC SYSTEM switch --- ON

FUEL VALVE switch -- ON, guard closed.

Altimeter Set to field elevation.

Instruments/Gages - Static position at zero.

Overhead swriches - OFF.

NOTE

Effective helicopier S/N 4128 and priot: (or daylight operations, ensure (NST LT switch (rheosted) is OFF. If the INST LT switch is on, the caution lights can be durined and may not be visible

Effective helicopter S/N 4129 and subsequent: With the INST LT switch (rheostat) on and caution light selector positioned to DIM, the caution lights are dimmed to a lixed intensity and can not be adjusted by the INST LT switch

GEN switch — OFF.

Circuit breakers — In (as required).

. -.

BAT switch — On for battery start: On for GPU start: OFF for battery cart start. Observe TRANS OIL PRESS, END OUT, and ROTOR LOW RPM caution/warning light segments lisurinated and applicable autio signal(s) operative.

WRN HORN MUTE button (il installeri) — Press to mute.

NOTE

Engine out audio may be descliveled.

CAUTION LT TEST button — Press to test illumination of each segment utilized.

Turbine outlet temperature (TOT LT TEST) button (il installed) — Press, check TOT light Ruminates.

ROTOR LOW RPM system — Check as follows: (if WRN HORN MUTE button is installed, the following does not apply.)

Collective pitch — increase; check ROTOR LOW RPM light and audio On

Collective pitch — Full down; check ROTOR LOW RPM light On and audio Off.

Flight controls — Neutrel/flat pitch position, apply friction (if needed).

FUEL BOOST AFT and FWD circuit breakers — in; check (us) pressure within limits and FUEL PUMP caution light off.

ANTI COLL LT awhch — On (if required).

ENGINE STARTING

Collective pitch Full down.

Throttle — Full closed.

Rotora Clear.

Starter — Engage (observe Engine Starter) Limitations, Basilon I). Engine oil pressure — Indication of morease.

Throttle - Open to Right Idle at 15% gas producer RPM with Turbine Outlet Temperature (TOT) at or below 160°C.



A START SHOULD NOT BE Attempted at N1 Bpeeds Below 12%.

Use the following guide for desired N1 starting apsed versus outside air temperatum:

N1 RPM	TEMP C ("F)
16%	Above 7* (45*)
13%	-18 to +7" (0 to 45")
12%	Below -18° (0°)

CAUTION

DUAING THE FIRST FEW SECONDS OF THE START THE TOT WILL ACCELERATE AT A FAIRLY RAPID RATE AND SHALL BE CLOSELY MONITORED.

Turbine outiel temperature (TOT) — Manitor to evoid hot start. Abort start if either the 927°C maximum or the 810 to 927°C MAXIMUM 10 SECONDS transient limitation is about to be exceeded by deproseing the engine IDLE AEL button, CLOSE THROTTLE and continue to motor the starter until TOT decreases to loss than 810°C. Some helicopters are equipped with a rod warning light on the TOT gage. If limits are exceeded or light (liuminates, consult Allison Engine Operation and Melnicenance Menual.

CAUTION

IF THE MAIN ROTOR IS NOT ROTATING BY 25% GAS PRODUCER SPEED (N1), ABORT THE START.

Sterier — Refease at 68% gas producer APM (N1).

Engine and transmission of — Check pressures increasing.

CAUTION

IF THE ENGINE HAS BEEN BHUT Down for more than 15 Minutes, stabilize at idle Speed for one minute Before increasing power.

NOTE

During cold temporature operations, studying angine stidle speed of 60 to 52% gas producer RPM (N1) until cil temperature reaches a minerature of 0°C.

Gas producer APM (N1) — Check for 50 (p. 52%.

External power - Disconnect; BAT On

Throllie — Open to 70% gas producer APM.

GEN switch — On.

Radio equipment — On,

ELT (II Installed) — Check for Inadvertent . Imnemission,

POS LT switch On.

PRELIMINARY HYDRAULICS CHECK

NOTE

Uncommanded control movement. e) motoring with hydrautic system off may indicate hydrautic system matumetion.

MYDRAULIC SYSTEM or CONTROL GOOST switch — OPP, then ON

ENGINE RUN-UP CHECK

Smoothly and firmly advance throttle at a continuous rate to full open position, melotaining collective pitch down and cysile control in neutral,

Power turbine (N2) governor - Chock range 97 to 100% RPM.

NOTE

If temperature is 4.4°C (40°F) of below and visible moisture is present, the engine anti-icing system shall be ON.

ENGINE DEICING or ENGINE ANTI-ICING switch — ON (if cooditions warrant, Observe TOT rise).

PITOT HEAT awritch (if (natalled) — ON in visible mointure with temperature below 4.4°C (40°F).

HYDRAULICS CHECK

NOTE

The Hydraulio Systems Check is to determine proper operation of the hydraulio actuators for each night control system. If abnormal forces, unequal forces, control binding or motoring are encountered, it may be an indication of a mallunctioning control actuator.

Collective - Full down, friction removed.

Rotor rpm (Nr) - Set to 100%.

HYDRAULIC SYSTEM or CONTROL BOOST switch OFF.

Cyclic Centered, friction removed.

Check normal operation of cyclic control by moving cyclic in an "X" pattern right forward to felt aff, (hen left forward to right aft (approximately one moh). Center cyclic

> Collective — Check for normal operations by increasing collective control slightly (1 (o 2 inches) Repeat 2 to 3 times as required. Return to full down position.

> Pedata (ii hydrautically boosled) — Displace elightly left and right. Note an increase in force required to move pedal in each direction.

> HYDRAULIC BYSTEM or CONTROL BOOST weigh ON.

> Cyclic and collective triction — Set as desired.

BEFORE TAKEOFF

Electrical equipment — Check; reset as required.

Lighting — As desired.

INST LT ewitch (rheosiei) — As desired.

Redjo — Check as required.

Throttle — Full open.

Power and filgbi instruments — Normal opétaling rénge.

> Generalor load — Below 70% (Note normal load is 10-20%).

Power luxbing N2 — Set for 100% in flat plich.

TAKEOFF

Collective pitch - Increase to hover.

Directional control — As required to maintain desired teading.

Cyclic control — Apply as required to accelerate smoothly.

Collective — Apply as required to obtain desired rate of Climb and Birapeed, Monitor angine firmts and adjust collective, as necessary.

IN-FLIGHT OPERATIONS

Arrapped — As desired (not to exceed VAP at flight sittlads or maximum allowable for dear(s) off flight configuration).

WARNING

AIRBPEEDS IN EXCESS OF AMSPEED LIMITATIONS DOOR(S) OFF WILL CAUSE CYCLIC CONTROL REVERSAL OF FORE AND AFT POSITION GRADIENT AND FUSELAGE BUFFETING.

P(TOT MEAT synthen (it installed) — ON in visible molecure with temperature below 4,4°C (40°F).

ENGINE DEICING or ENGINE ANTI-ICING switch — ON, in visible moleture when (amperature is below 4.4°C (40°F).

NOTE

TOT will increase when ENGINE. AMTI-ICING /s switched ON.

Maximum pressure áltitude la 20,000 (eá).

NOTE

N is recommended that approved baygen equipment be used when operating at allitudes above 10,000 feet.

DESCENT AND LANDING

Flight controls Adjust friction as desired.

Throttle Full open.

Power turbine RPM (N2) - 97 to 100%.

NOTE

Decreasing the collective pitch into the low power realm may result in a RPM overspeed condition. For prolonged low power approaches the RPM can be controlled by a small amount of collective pitch increase (no significant torque increase) and/or by beeping down the N2 governor speed controller to 100% RPN. This will maintain governing within limits during low power descents, however, the GOY RPM awitch should be beened to INCR. as collective is applied. (See N2) trensiont Overseeed Limits In Section 1.)

Flight path As required for type of approach being media

LDG LTS switch — On as required.

ENGINE SHUTDOWN

Throitie — Flight Idle. Check engine deceleration time.

Full RPM to 55% N1 should lake 3-5 seconde. Consult Allison Engine Operation and Malptenance manual if these times are exceeded. WAN HOAN MUTE builden (if installed) — Press to mute.

Flight controls — Position for shutdown; apply friction.

ENGINE DEICING of ENGINE ANTHICING (which — OFF.

TOT — Stabilized at liight idle speed for two minutes.

ELT (if installed) — Check for inselve-tent transmission.

IDLE REL button -- Depress and roll throttle firmly to full closed position.

CAUTION

TO ENSURE ENGINE CUTOFF, HOLD THROTTLE IN CLOSED POSITION UNTIL N1 DECELERATES TO 0 AND TOT IS STABILIZING. DO NOT TURN BAT SWITCH OFF UNTIL N1 IS D AND TOT STABILIZED.

TOT — Check decreasing.

During rator coast down, apply cyclic to minimize static stop contact.

Radio equipment - OFF.

FUEL VALVE switch - OFF.

GEN switch — OFF.

All switches (except BAT) — OFF.

BAT switch — OFF after N1 is zero and ... TOT stabligged.

Pilot should remain at flight controls until rater has come to a complete stop. THESE RESTRICTIONS ARE IN CONJUNCTION WITH THE FUEL SHUTOFF VALVE PROVISION FOR THERMAL RELIEF. REFER TO BELL HELICOPTER ALERT SERVICE BULLETIN 206-82-18. ALL OTHER DATA ON PAGE 2-13 REMAIN UNCHANGED.

ENGINE SHUTDOWN

FUEL VALVE switch – Leave ON.

- AFTER EXITING HELICOPTER

install main and tall rotor blodown il any of the following conditions subl:

high or guery winds are predicted.

Other helicopters are operating or expected to be operating in the immediate area Any time the helicopter is to be tell unattended.

install protective covers (engine inie), exhaust, and pitol tube).

13 Feb 1992

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EMERGENCY AND MALFUNCTION PROCEDURES

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Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

This section contains fault conditions considured to constitute an emergency or mailunction condition. Red warning lights and ember caution lights are located on the instrument panel and provide the pilot with a visual indication of a condition. tault, or system mattunction by means of an individual system light. Illumination is an indication that a problem has occurred which, unless treated properly, could affect flight safety. In addition, certain emergency conditions are made known by audio signals. Asmedial action as described below should be taken with the urgency agen ellustion werrants.

All corrective notion procedures listed hotein assume the pilot gives first priority to helicopter control and a sale light path.

The belicopter should not be operated following any emergency lending or shuidown until the cause of the maifunction has been determined and corrective maintenance action taken.

DEFINITION

The following terms indicate the degree of urgency in landing the helicopter.

Land as soon- Land without dalay at neerest suitable eres as possible (i.e. open field) at which a safe approach and fanding is reasonably eseund.

as practical

Land as soon -- The landing sile and duration of the flight are at the discretion of the pitol. Extended flight beyond the nearest el erre pribrel bevoroge not recommended

WAANING LIGHT (RED) SEGMENTS WARNING

LIGHT

FAULT AND REMEDY

- ENG OUT Engine power tailure (N1 taudio II less than 55%). Reduce functionally plich immediately to autorotate. If ample oliilude remains investigate failury. elternot engine relight.
- BATTERY HOT Battery case temperature has reached 140°F (60.0 °C) or higher. Turn BAT switch OFF. Lond as seen as possible. Maintenance ection is required.

ENGINE FIRE DURING STARTING OR SHUTDOWN

An engine firs during elect could be caused by an overloading of fuel in the composition chamber and a delayed lanition of the fuel, recalling in firms emenating from the telpipe. To extinguish fire, proceed as follows:

Starter — Continue to mator the engine.

Throttle - Full closed.

FVEL VALVE awitch - OFF.

IGN ENG circuit breaker -- Out.

Complete shutdown.

ENGINE FIRE DURING FLIGHT

Triottle — Close.

immediately enter autorotation

FUEL VALVE switch - OFF.

BAT switch - OFF.

Accomplish autorolative descent and landing.

CABIN VENTILATION

Ventiliation of the cebin to protect occupants from the effects of toxic fumes, smoke, etc., chall be immediately performed as follows:

VENT - Open.

Cabin windows — Open for maximum ventilation.

ENGINE FAILURE AND AUTOROTATION

Collective plich — Adjust as required to maintely refor RPM, 90% to 107%.

NOTE

Rotor RPM maintained at the high and of the operating range will provide meximum refor energy to accomplish the landing; but will cause an increased rate of descent.



REDUCE FORWARD SPEED TO DESTRED AUTOROTATIVE AJAGPLED FOR EXISTING CONDITIONS. AIRSPEED FOR MINIMUM DESCENT IS 60 MPH (52 KNOTS) IAS. AIRSPEED FOR MAXIMUM QUDE DISTANCE IS 80 MPH (69 KNOTS) IAS.

At low eltitude, close throttle and thre as required to lose excessive speed.

Apply collective pitch as firre effect, decreases to luther reduce forward apend and cushion lending.

It is recommended that level touchdown be made prior to pessing through 70% rotor RPM Upon ground contact, collective plich shall be reduced smoothly while maintaining cyclic in neutral or centered position.



EXCESSIVE DROUND RUN WITH COLLECTIVE UP, OR ANY TENDENCY TO FLOAT FOR LONG DISTANCE PRIOR TO GROUND CONTACT SHALL BE AVOIDED.

Maximum arrspeed for steady autorotation (s 115 MPH (100 knots) IAS. Autorotation shove this speed results in high rates of descent and low rotor speed. A blue radial ---

TO APPROVED



reminder of this condition.

ENGINE AIR START

When cause of the engine failure is believed to be mechanical, do not attempt a restart.

is installed on the airspeed indicator as a



Collective pitch - Adjust as required to maintain rotor RPM, 90 to 107%.

Roduce forward speed to desired autorotative airspeed of 50 to 80 mph (52 to 69 knots) IAS for existing conditions.

GEN switch - OFF,

Perform normal engine start procedure.

CAUTION 2 -----

DO NOT ATTEMPT AIR START ABOVE 12,000 FEET. (TOT RISES TOO FAST TO CONTROL)

FUEL CONTROL AND/OR GOVERNOR FAILURE

Engine fuel control and/or governor failure is evidenced by a change of power or RPM. There is no manual fuel control on the engine. Control power with throttle if engine overspeeds.

Maintain APM with collective pitch d engine underspeeds.

Establish autorotative glide it power to very low or if engine must be shul down.

DRIVESHAFT FAILURE



FAILURE OF MAIN DRIVESHAFT TO TRANSMISSION WILL RESULT IN COMPLETE LOSS OF POWER TO MAIN ROTOR. ALTHOUGH COCKPIT INDICATIONS FOR A DRIVESHAFT FAILURE ARE SIMILAR TO AN ENGINE OVERSPEED. IT IS IMPERATIVE THAT AUTOROTATIVE FLIGHT PROCEDURES BE ESTABLISHED (MMEDIATELY. FAILURE TO REACT IMMEDIATELY TO ROTOR LOW RPM LIGHT, AND AUDIO AND DUAL TACMOMETER CAN RESULT IN LOSS OF CONTROL

Indication of a transmission to engine driveshaft failure is a feft yow, rapid decrease of rotor RPM with a ROTOR LOW light, accompanied by an increase of power turbine RPM. Noise lavel may increase due to overspeeding engine and driveshaft breakage.

Collective pitch — Adjust to maintain rolor. RPM, 90 to 107 % .

Cyclic Maintain heading and allhude control. Adjust to obtain desired autorolation airspeed. 52 to 69 KIAS.

Throttle - Open (angine is providing power to tail rotor).

Complete autorolative landing and helicopter shut down.

Prepare for power-off landing.

TAIL BOTOR CONTROL Failure

In the event of a tail rotor failure the failure can be one of two types. Each type requires its own procedure and shall be performed as follows:

COMPLETE LOSS OF THRUST

Reduce throtile to flight idle, Immediately enter autorotation and maintain a minimum sinapsod of 58 MPH (50 knots) IAS during the descent.

NOTE

Airflow around the vertical finmay parmit controlled flight at low power levels and sufficient arraped when a suitable landing site is not available; however, the fouthdown that be accomplished with the throttle in the full closed position.

FIXED PITCH FAILURE (Pitch change slider, control failure, etc.)

Depending on the pitch position of the tell rotor, st the time of failure, angine power and airspeed shall be varied as follows:

Power — Adjust as required to minimize excessive yawing

Airepeed — Adjust to determine best velocity to minimize excessive yawing,

HYDRAULIC SYSTEM FAILURE

The first indication of hydraulic boast failure will be an increase in the force required for control movement; feedback forces will be noticed as well as rate limiting. Control motions will result in normal flight reactions in all respecte, except for the increase in force required for control movement. In the ovent of hydraulic power faiture, proceed as follows:

Reduce arspeed to 70 to 80 MPH (61 to 69 knots) (AS.

HYD BOOST circuit breaker — Out: if power is not restored — In.

CONTROL BOOST or HYDRAULIC SYSTEM switch ON; OFF it power is not restored.

Land as soon as practical and Investigate.

A run-on landing at 12 to 17 MPH (IG to 15 knots) is recommended. Muntum mapped sbove translational lift speed for best control at touchdown.

AUDIO WARNING SYSTEM

ENGINE OUT WARNING SYSTEM

When this system (If functional) is activated an intermittent audio signal is produced and the ENG OUT light is illuminated (N1 less than 55%).

ROTOR LOW RPW WARNING SYSTEM

When this system is activated the ROTOR LOW RPM light is liturnineted and a steady audio signal is produced. The low RPM warning system is activated when collective plich is off the down stop and roto- RPM is less than 90%.

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CAUTION LIGHT (AMBER) SEGMENTS

CAUTION LIGHT

FAULT AND REMEDY

ROTOR LOW **DPM** (audio and light)

TRANS DIL PRESS

is full open Mein transmission pressure is below minimum, check gage. Land as soon as

Rotar RPM 16 below

normal (approximately

90%] Reduce collective

oitch and ensure throttle

TRANS OIL Main transmission oil TEMP temperature is at or above red line, check gage. Aeducing power will help alleviate the condilion. Check transmission oil preserve. Land as soon as nossible.

possible.

BATTERY Ballery case lemoerature TEMP has reached 130°F (54.5°C) or higher. Turn BAT switch DFF until battery cools (light extinguishes), then BAT switch ON.

CAUTION LIGHT

T/R CHIP

GEN FAIL

BAGDAGE

(if installed)

DOOR

FAULT AND REMEDY

NOTE

Frequent and repetitive BATTERY TEMP indications may be indicative of a marginal battery condition It is recommended that if this accurs the battery should be removed and inspected in accordance with manutacturar's tecommendation at the first convenient opportunity.

ENGINE CHIP Metallic perticles in engine oi). Land as soon as possible.

TRANS CHIP Metallic particles in transmission oil. Land as soon as possible.

> Matellic particles in tail rotor gearbox oil. Land as soon as posaible.

Generator has Jailed. (If installed) GEN awitch — BESET. then ON. IT GEN FAIL light remains illuminated, GEN switch — OFF, Land as soon as practical.

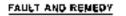
> Baggaga compariment door open. Land as soon as practical.

FUEL FILTER Engine fuel filter cloqued. (If installed) Land as soon es practical. Clean before next flight.

AF FUEL Avrframe fuel tilter FILTER clogged. Lend as soon es (it installed) practical. Clean before next flight.



CAUTION LIGHT



WARNING

OPERATION WITH BOTH

FUEL BOOST PUMPS

INOPERATIVE IS NOT

AUTHORIZED DUE TO

PÓSSIBLE FUEL

SLOSHING IN UNUSUAL

ATTITUDES OR OUT DF TRIM CONDITIONS AND ONE OR BOTH FUEL BOOST PUMPS INOPERATIVE. THE UNUSABLE FUEL IS TEN CAUTION LIGHT

FUEL LOW

(if installed)

Effective helicopier S/N 4110 and prior, approximately 20 callons of fuel remaining.

FAULT AND REMEDY

Plan landing.

Effective helicopter S/N 4111 and aubsequent. approximately 17 gallons of fuel remaining.



FUEL PUMP

One or both fuel boost pumps is inoperative. Descend to below 6000 iest pressure altitude if flight permits. Land as soon as practical.

GALLONS.

NOTE

The engine is designed to operate without boost pump pressure under 6000 leat pressure allilude and one boost pump will supply sufficient fuel for normal engine operations under all conditions of power and altitude. Both fuel boost pumps shall be ON tor all normal operations.



ELECTRICAL POWER Failure

Electrical power for flight is furnished by the starter which is utilized as a generator after the start has been accomplished. Evidence of men generator failure will be provided by observing loadmeter toad. There is no provision for standby operation in the event of generator failure. Necessary power can be furnished by the battery for short periods of time, in case of generator failure.

> GEN FAIL light (if installed)— Muminated.

> GEN switch RESET then ON. If power is not regioned;

GEN switch - OFF.

All electrical equipment DFF (to conserve battery).

Required electrical equipment ON. only as needed.



REDUCE ALTITUDE TO BELOW 6000 FEET PRESSURE ALTITUDE IF FLIGHT PERMITS BECAUSE OF POSSIBLE LOSS OF FUEL BOOST PUMPS.

Land as soon as practical.

ENGINE ICING

ENGINE DEICING of ENGINE ANTI-ICING switch (anti-ice) ON (it conditions warrant).

TOT - Maintain within limits.

NOTE

When anti-lice system is ON, TOT will rise for same power sating.

ENGINE OIL PRESSURE LOW, HIGH, OR FLUCTUATING.

If engine oil pressure is below minimum or above maximum, land as soon as possible.

If engine oil pressure functuales but does not excend a fimit, monitor engine oil pressure and temperature, and land as soon as practical.

HIGH ENGINE OIL TEMPERATURE

If angine oil temperature exceeds limits, land as soon as practical.

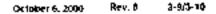


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Section 4

PERFORMANCE

The Beil 2068 Jel Ranger III performance data are contained in this section. The data listed on the graphs are derived from actual flight tests and are intended to provide information to be used in conducting flight operations. The performance data contained herein is applicable to the 250-C208/C20J engine.

POWER CHECK PROCEDURES

The Power Check chart (figure 4-) indicates the minimum percent tarque that must be available from an engine meeting the minimum Allison specification. The angine must develop these values in order to meet the performance data contained in the flight manual.

The takeoff power limits are as follows:

Maximum Lorque — 100% (5 minules).

Maximum TOT (turbine outlet (emperature) 810°C (5 minutes).

Maximum gas producer RPM (N1) — 105%.

NOTE

Accurate power checks may be accomplished in a hover. In a stabilized 50 MPH (52 knots) IAS climb or in a level flight. Power checks should only be conducted in a hover when altitude, temperature, and gross weight permit sale hovering height. Refer to Height-Velocity Diagram in BHT-20683-FM-1 More accurate checks are achieved above Maximum Continuous TOT (739-C), which will generally require being above 5,000 feet, to avoid exceeding torque limits.

On cold days, the torque pressure limit may be reached before the TOT limit is reached. On hot days and/or high altitudes, the TOT will be the limiting factor. To perform a power check, ensure the ENGINE DEICING or ENGINE ANTI-ICING switch and GEN switch are OFF. Raise collective to increase power until a stabilized TOT or torque pressure limit is reached. Record OAT, TOT, pressure altitude, torque and (Nt) Refer to Power Check chart, figure 4-1.

EXAMPLE

OAT 10/C

TOT 740°C

PRESSURE ALTITUDE 6000 FEET

Actual percent forgue (%) reading must equal or exceed chart percent forgue (%) reading of 93.5% for power check to be acceptable.

RATE OF CLIMB

The rate of climb as measured with an animeter will show refers of climb only on a standard day, with a standard temperature lapse rate. Refer to Rate of Climb charts, figure 4-2.

The following example is for use with Rate of Climb — Maximum with Taksoff Power. The example is typical for use with all Rate of Climb charts

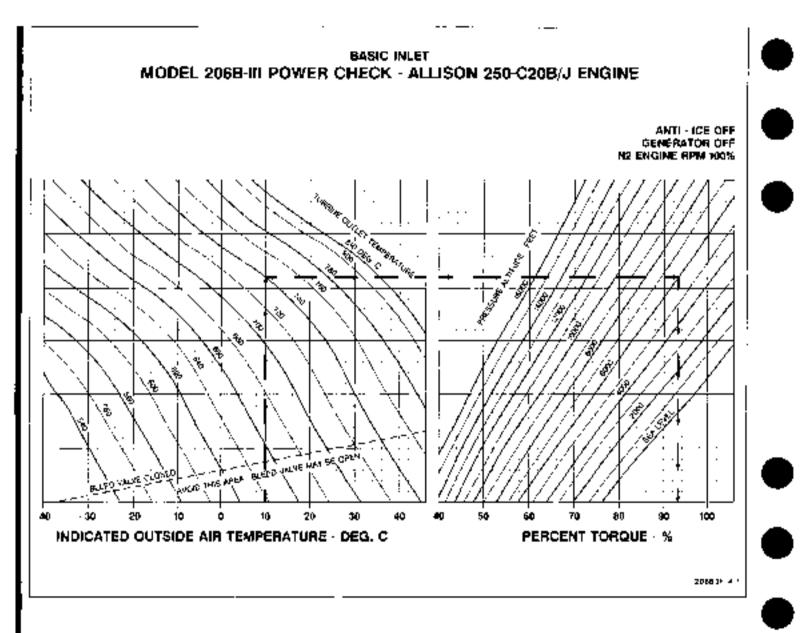


Figure 4-1. Power check chart Allison 250-C20B/C20J engine

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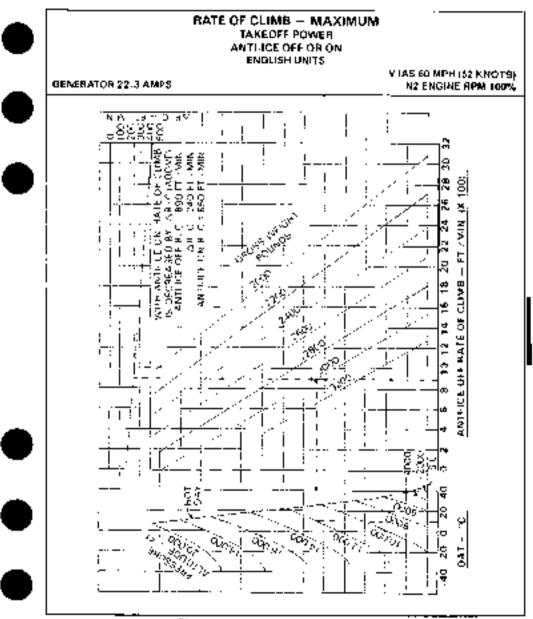
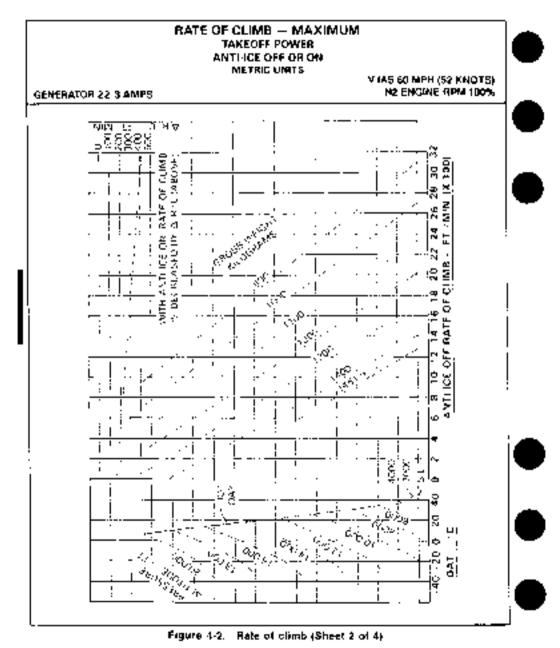
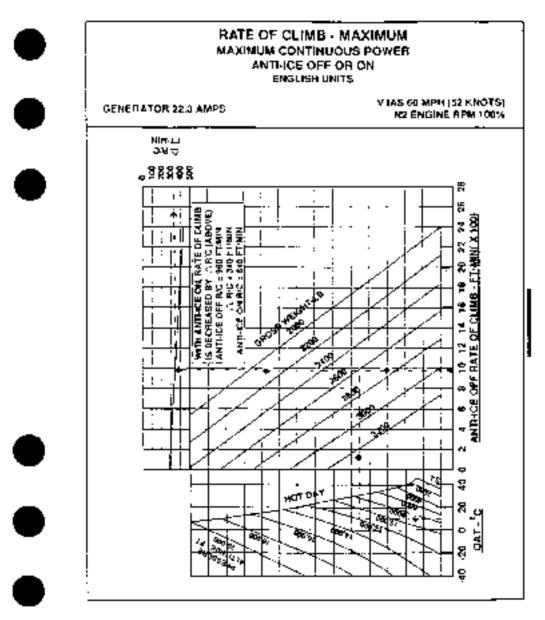
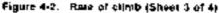


Figure 4-2. Rate of climb (Sheet 1 of 4)

TC APPROVED







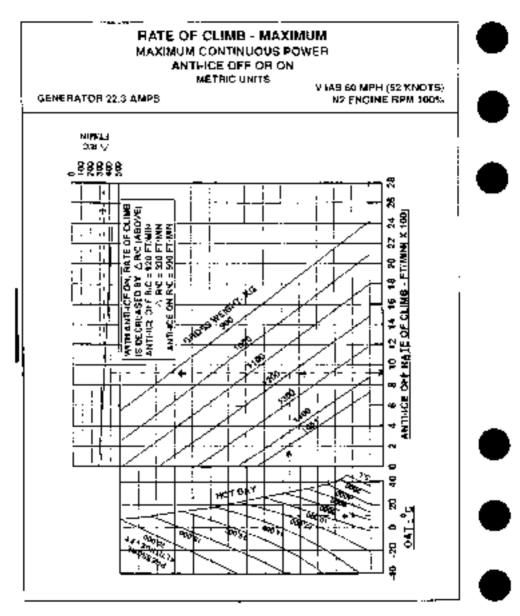


Figure 4-2. Rate of climb (Sheet 4 of 4)

EXAMPLE:

Assume an ambient OAT of 10°C, a pressure allitude of 12,000 feet and a gross weight of 3000 fbs. (1380.8 kilograms).

PART 1 - ANTHOR OFF

Enter temperature scale at 10°C, proceed varifically to intersection of the 12,000 fast pressure sliftude surve; from this point move forizontally to the right to intersect the 3,000 b. (1360.5 kg) gross weight line. Drop vertically and read anti-ice OFF rate of climb of 890 feet perminute.

PART 2 - ANTI-ICE ON

From intersection of horizontal example line at 3,000 ibs. (1350.8 kg) group weight, proceed vertically to the upper Δ R/C FT. MIN section of the chart disgonal line and then move horizontally to the right and read 240 H./min. Subtract 240 fL/min. Δ R/C from the 890 G/min. anti-ice OFF R/C and the anti-ice OF R/C is easer 3000 lb. (1350.8 kg) group weight.

RATE OF CLIMB - DOOR(S) OFF

Reduce basic Rate of Climb ohart data 350 feet per minute when operating with one, all, or any combination of cabin doore off.

OPERATION IN ALLOWABLE RELATIVE WIND

Satisfactory stability and control has been demonstrated in relative winds of 20 MPH (17 knots) sideward and rearward at all loading conditions within Area A of Hover Calling charts.

IGE AND OGE HOVER CEILING CHARTS

NOTE

The Nover Celling charts presented in this manual relievi performance with the 65 inch diameter tail rotor (P/N 205-016-201) installed. For performance with the 62 inch diameter tail rotor (P/N 205-010-780), relier to BHT-20563-FMS-22,

The Mover Celling in Ground Effect cherts (figure 4-3) and Hover Celling Out of Ground Effect cherts (figure 4-4) present hover performance (allowable groas weight) for conditions of pressure shifude and OAT. The cherts are divided into two areas.

AREA A (White area) so shown on the hover ceiling charts presents hover performance for which controllability has been demonstrated in sideward and rearward relative wind conditions up to 20 MPH (17 knots).

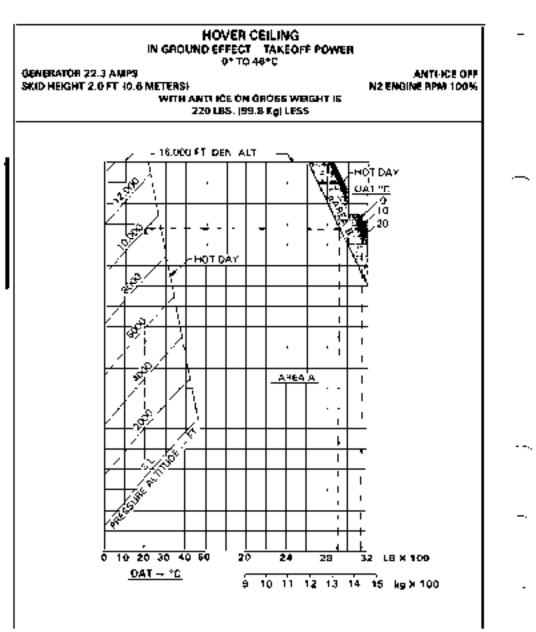
CAUTION

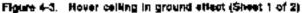
ENGINE TOT WILL RIBE Noticeably when hovering Downwind, avoid hovering Downwind when operating Near tot limits.

AREA B (Sheded Brea) so shown on Hover Colling churts presents hover performance that can be realized in CALM WINDS or winds outside the CRITICAL RELATIVE WIND AZIMUTH AREA In TIQUE 4-5.

HOVER CEILING

The following example is for use with the Nover Colling in-Ground-Effect, Takacti Power, Anti-Ice Off chart and is typical for use of Hover Colling charts.

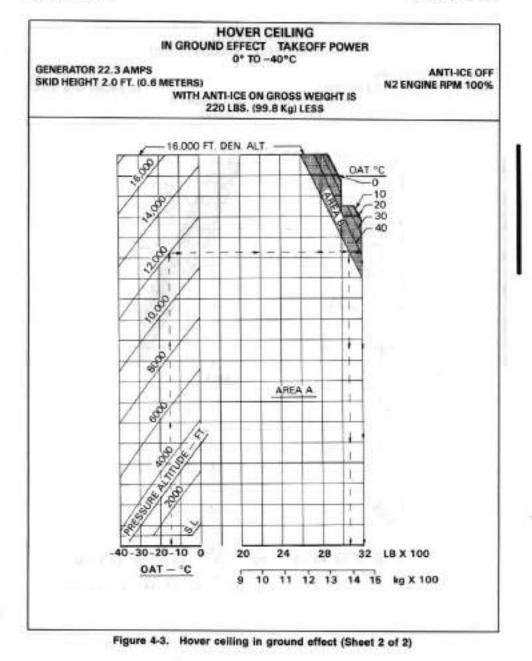


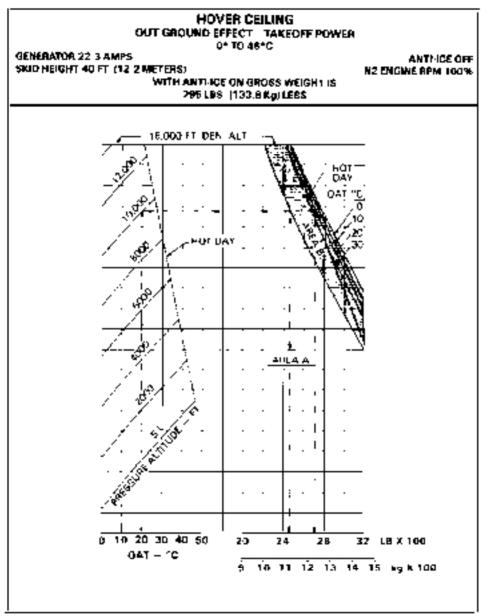


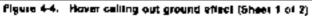
4-10

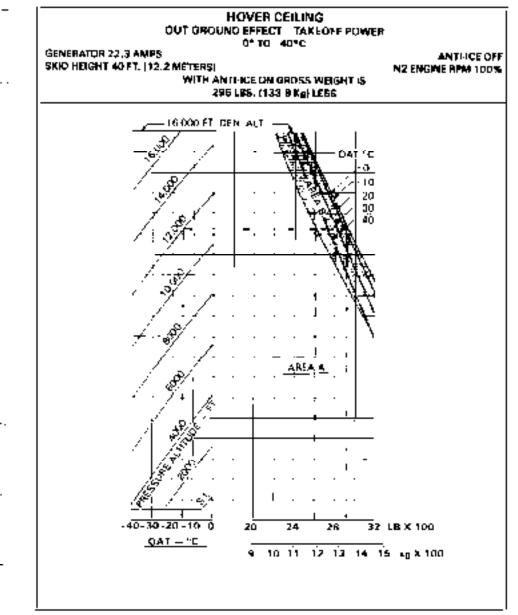
FAA APPROVED

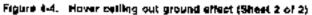
BHT-20683-FM-1







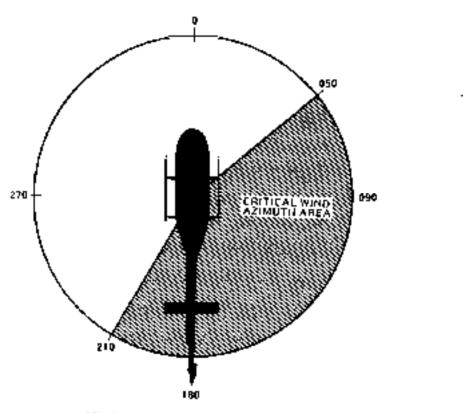




4-13

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- -



CRITICAL RELATIVE WIND AZIMUTH AREA

Figure 4-5. Critical relative wind azimuth area

NOTE

Tell rotor control margin and/or control of engine parameters (TOT and torque) may preclude operation in AREA B of the Movar Celling charts when the relative wind is in the Critical Wind Azimuth Area.

EXAMPLE

Determine gross weight have: capability at a site having the following conditions:

Pressure Aftitude = 10,000 Ft.

Outeide Air Temperature - 20°C.

For the above example the pilot must refer to the 0°C to 46°C Hover Calling charte.

From the appropriate IGE chart obtain:

A maximum of 2915 pounds (1322.2 kilograms) for all allowable wind conditions, and a maximum of 3145 pounds (1426.6 kilograms) when wind conditions are calm or outside the ortions wind azimuth area.

From the appropriate CGE chart obtain:

A maximum of 2460 pounds (1115.5 kilograms) for all allowable wind conditions, and a maximum of 2710 pounds (1229.3 kilograms) when wind conditions are calm or cutside the critical wind azimuth area.

EXAMPLE.

Determine gross weight hover capability at a site having the following conditions:

Pressure Altitude = 12,000 PL

Outside Air Temperature - -15°C

For the above example the pilot must refer to the 0°C to -40°C Hover Celling charte.

From the appropriate KiE chart obtain:

A maximum of 3070 pounds (1392.5 kilograme) for all allowable wind conditions, and a maximum of 3200 pounds (1461.6 kilograms) when wind conditions are calm or outside the critical wind szimuth area.

From the appropriate OGE chart obtain:

A maximum of 2610 pounds (1183.5 kilograms) for all allowable wind conditions, and a maximum of 2920 pounds (1324.6 kilograms) when wind conditions are calm or outside the critical wind azimuth area.

NOTE

The In-Ground-Effect (IGE) and Out-Of-Ground-Effect (OGE) Hover Celling charts are presented separately for the temperatures from 0°C to 46°C and for temperatures from 0°C to 40°C, only for clarity of presentation.

INDICATED A/S — MPH	Table 4-1. Airepeed Inst CaligRATED A/S MPH	ullation correction table INDICATED A/S (KNOTS)	CALIBRATED A/S (KNOTS)	
40	40.5	(35)	(35.5)	
45	45	(40)	(40)	
50	50	(45)	(48)	
60	59.B	(50)	(49.5)	
70	64	(55)	(54. 5]	
e 0	79	(60)	(89)	
90	\$ 8.5	(70)	(66)	
100	\$8.5	(90)	(79)	
110	108	(90)	(88.5)	
120	118	(100)	(\$8.5)	
130	128	(110)	(108.6)	
140	138	(120)	(118.5)	-
154	148	(190)	(120)	

HEIGHT VELOCITY DIAGRAM

The Height Velocity Diagram defines the conditions from which a sets landing can be made on a symoth, level, firm surface following an engine lafure. The Height-Velocity Diagram is valid only when the height-Velocity Diagram.

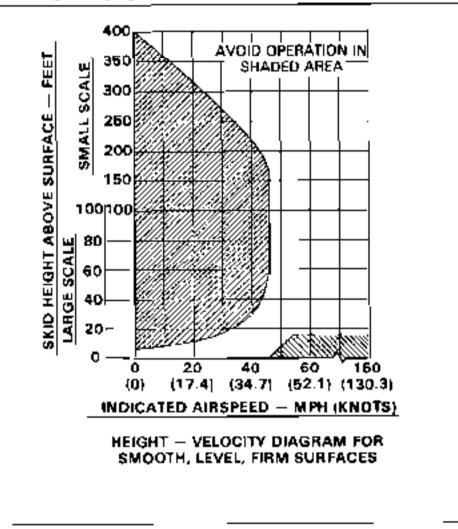


Figure 4-6. Height velocity diagram



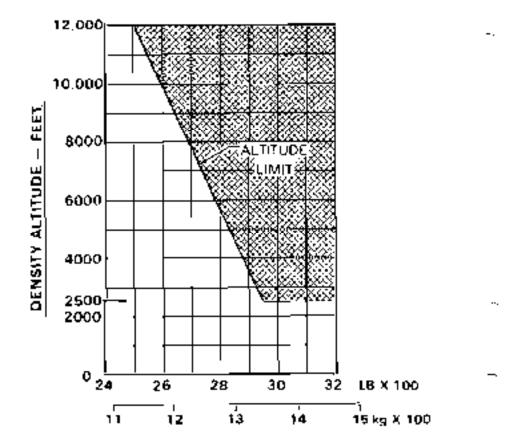


Figure 4-7. Altitude ve gross weight limit for height-velocity diagram.

DENSITY ALTITUDE/ TEMPERATURE CONVERSION

A Density stitute/temperature conversion chart (iligure 4-8) is provided to and in calculating performance and limitations. Density attitude (H_0) is an expression of air density in terms of height above sea level. Hence, the tess dense the air, the higher the H_p for standard conditions of temperature and pressure, H_p is the same as pressure attitude (H_0). As temperature increases above standard temperature for any allitude, H_0 with increase to values higher than H_p . Figure 4-5 expresses H_0 as a function of H_p and temperature.

Also, the Density shitude/temperature conversion chart includes the inverse of the square root of the density ratio (1/vo), which is used to calculate KTAS by the reliaton: KTAS = KCAS > 1/ve

EXAMPLE

If amblent temperature is 0° C and H, is 4000 feet, find H, 11/0, and true airapeed for 100 KCAS

SOLUTION:

- Enter bottom of chan at 0° C.
- Move vertically upward to 4000 (set H_y line.
- c. From this point, move horizontally to sett, and read an N₀ of 3150 feet. Then move horizontally right, and read 1/vg = 1.048.
- d. True airspeed × KCAS x 1/vo = 100 k 1.046 = 104.8 KTAS.

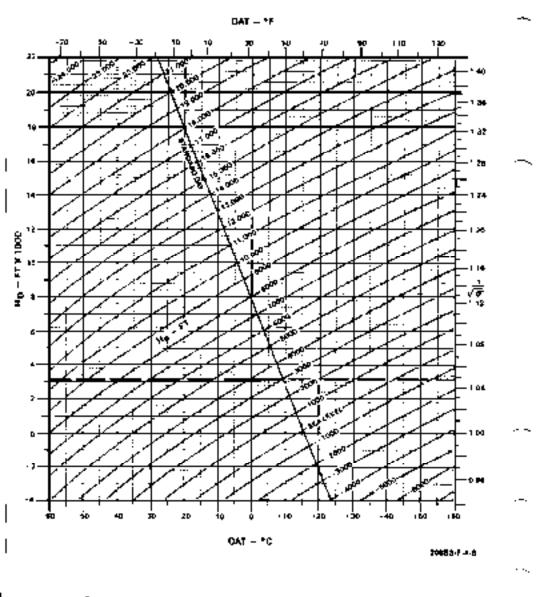


Figure 4-8. Density allitude and remperature conversion chert

4-20 Rev. 3

Appendix A

OPTIONAL EQUIPMENT SUPPLEMENTS

.–	Paragra	TABLE OF CONTENTS	Page Number
,_	OPTION	IAL EQUIPMENT	A-3
	Table Nomber	LIST OF TABLES Title	Page Number
	A-1	Flight Menual Supplements for Optional Equipment	A-8



OPTIONAL EQUIPMENT SUPPLEMENTS

OPTIONAL EQUIPMENT

Boil Helicopter Textron's policy is one of continuous product improvement. Bell reserves the right to incorporate design changes, make additions to, and improve the products without imposing any obligation upon the company to furnish or install such changes, additions, improvements, etc., on its products previously menufactured.

NOTE

All data contained in the following supplements is applicable for 250-C208 of 250-C20J engine.

	KIT NUMBER	DATE	CURRENT REVISION
8HT-20683-FMS-1 Cabin Henter	206-706-106	7-1-77	Rejsound 2-13-82
BHT-206B3-FMS-2 Litter Kit(s)	206-706-122 and 205-705-324	7-1-77	Reissued 2-13-92
BHT-20680-FMS-3 Hoist — External	205-706-124 or 206-705-126	7-1-77	Reissued 2-13-92
BHT-20683-FMS-CAN-3 Canadian Addendum for Molet — External	206-706-124 of 206-705-126	12-5-83	Gancelled
BMT-20583-FMB-4 Loudhailer	205-899-415	7-8-77	Reissund 5-9-91
BHT-205B3-FMS-5 Dual Rotor Brake	205-705-034	2-1-77	Reissued 2-13-92
BHT-206B3-FMS-6 Night Flying	Incorporated in Flight Manuel Section 1		
BHT-206B3-FM6-7 Stability and Convol Augmentation System (SCAS)	206-706-305	7-1-77	₽¢13+92 2×13+92

Table A-1. Flight Manual Supplements for Optional Equipment

Table A-1. FI	light Manual Supple	ments for Optional	Equipment (Cont)
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NAME OF EQUIPMENT	KIT NUMBER	DATE CERTIFIED	CUARENT REVISION
BNT-205B3-FMS-B Float Landing Gear Standard Type (Fixed Float)	205-705-008	7-28-77	Reissued 2-13-92
BHT-20683-FMS-9 Cargo Hook 1500 Lb (681 kg) Capacity	206-706-335	7-28-77	Releaued 9+12-96
8HT-20683-FM9-CAN-8 Cargo Hook 1500 Lb (681 kg) Capacity	208-706-335	7-29-77	Cancelled
8)17-20683-FMS-10 Deflector Kit – Engine Alr Induction System	206-706-136	7-28-77	Relation 6 OCT OD
BHT-20583-FM9-11 High-Skid Gear with Emergency Flotetion which Incorporates Automatic Arming Feature	206-705-01D	7-28-77	Reissued 2-13-82
BHT-20603-FMS-12 Particle Separator — Engine Air Induction System	206-708-200 or 205-706-201	7-28-77	Revision 6 OCT 00
BHT-20683-FMS-13 HI-3kki Landing Gear. Tubular Type	205-705-031	7-28-77	Reissued 2-13-92
BHT-20683-FMS-14 Emergency Flotation on High-Skid Gear with Proflight System Teat Feature	205-705-010	7-28-77	Reissued 2:13:92
BHT-20683-FMS-15 Fixed Cargo Hook	205-705-104	7-26-77	Reissued 2-13-92
BHT-20683-FMS-CAN-15 Fixed Cargo Hook	208-706-104	7-28-77	Capcelled
BHT-20683-FMS-16 Environmental Comrol System (Cabin Temp Control)	205-706-344 or 205-706-402	7-28-77	Aelsauad 2-13-92
BHT-20683-FMŞ-17 External Cargo Hook	208-706-101	7-28-77	Reissued 9-13-85

	KIT NUMBER	DATE CERTIFIED	CURRENT REVISION
BNT-20683-FMS-CAN-17 External Cargo Hook	206-706-101	7-28-77	9-13-95 Cancellet
BNT-20883-FMS-18 Engine (Automalic) Re- Ignilian	206-705-038	8-\$1-77	Relayued 6 OCT 10
9HT-20683-FM5-19 Aoxillary Battery 13 Amp Hour	205-706-330	9-16-77	Acisaded 2·13·92
BHT-20683-FMS-20 Bleed Air Healer	206-705-149 or 206-705-700	10-26-79	Reisswod 2-13-92
BHT-206B3-FMS-21 Area Navigation System	206-705-006	11-14-80	Reissued 2-13-92
BMT-20683-FMS-22 62 (nch Diameter Tall Rolor Blados	205-010-750	2-13-92	Original
BMT-20683-FMS-23 thru BMT-20683-FMS-25	Reserved		
BHT-205B3-FMS-28 Lightweight Emergency Flatation Landing Cost	206-706-211	6-7-77	Rovisian 7 8-9-93
BMT-20683-FM5-27 Fuel Pressure Gage	Incorporated in Flight Manuel Section 1	12-10-84	Cancelled
BHT-20683-FMS-28 Blade Polding Kil	205-698-014	4-25-8B	Reissund 2-13-92
BMT-20693-CAA-FM5-29 United Kingdom Registered Helicopters		11- 0- 79	Reissued 1-3-92
BHT-206B3-FM9-30 Engine Fire Ortection System	205-859-946	9-19-88	Raiasu ed 2:13-92
BNT-20683-FM5-CAN-31 Cenadleo Addendem to Supplemente for Externel Holst and Cargo Hook		2-13-92	Original
BHT-20683-FMS-32 Pop-Out Floats with GEN Fail Caution Light	208-706-211	1-15-93	Revision 1 8-9-89

Table A-1. Flight Manual Supplements for Optional Equipment (Cont)

I

NAME OF EQUIPMENT	KIT NUMBER	DATE CERTIFI eo	CURRENT REVISION
BHT-20683-FMS-33 TH-67 Configuration Fuaj System and Torque Indicator	206-075-676 206-075-739 206-075-740 206-350-504	10-6-89	Reissued D9-D3-97
BHT-20683-FMS-34			Not Printed
BHT-20683-FMS-35	Reserved		
BHT-206B3-FMG-36 Mot Weather Operations Kit	206-706-514	7-7 95	Original
BHT-20683-FMS-37	Reserved		

Table A-1. Flight Manual Supplements for Optional Equipment (Cont)

BHT-206B3-FMS-1



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

CABIN HEATER 206-706-106

CERTIFIED JULY 1, 1977

This supplement shall be stusched to blodel 20080 Flight Manual when Cabin Heater, bit has been installed.

information contained herein supplements information of basic Flight Manual. For Limitations, Procedures, and Performance Data not contained in this supplement, consett basic Flight Manual.

COMPANY KONCE COMPANY 1100 EX11 RELOCATION NO. AND BOLL RELOCATION NO. A DAYSING OF RECTRON COMMANY ITO FULL WORLD NELLAWAY



FOR CHARGE BOX AND A FORT WORLD'S MARKE THESE

REISSUED 13 FEBRUARY 1992

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LOG OF REVISIONS LOG OF PAGES ----REVISION REVISION PAGE NO PAGE NQ. PN.....0 Title 1 - 2 0 A/B.....0

APPROVED:

Bulider

MANAGER

 ROTORCRAFT CERTIFICATION OFFICE FEDERAL AVIATION ADMINISTRATION FT. WORTH, TX 78183-0170

NOTE

Revised text is indicated by a black vartical line, insert latest revision pages; dispose of supersected pages.

GENERAL INFORMATION

The Bell Cabin Heater Kit (205-705-106) consists of a combustion heater, blower, ducts, fuel system, electrical system, edjuetable velvee, and heater controls. The heater has a rated capacity of 30000 BTU output, and is designed to operate while the helicopter is on the ground or airborne.



LIMITATIONS

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is installed and ballest readjusted, it necessary, to return empty weight CG to within allowable limits.

Section 2

NORMAL PROCEDURES

HEATER PRE-START CHECK

FUEL BOOST AFT and FWD circuit breakers — in.

FUEL VALVE obcuit breaker - In.

HTR PWR circuit breaker --- in.

HTR CONT circuit breaker - in.

FIREWALL SHUT OFF RELEASE PULL krod — in.

BAT switch - On.

FUEL VALVE switch - ON.

HEATER FAIL light - Prese-to-test.

HEATER START AND OPERATION

HEAT-VENT switch — HEAT. (Combustion sir blowers should operate and HEATER FAIL light should illuminate).

NOTE

Heater ignition difficulty may be experienced at -20°F (-28°C) and below when using ASTM Type A or A-1 (JP-5) fuel.

tiTR START builton switch — Press and hold. (ignitian shauld coour within 5 seconds and not more than 10 seconds.)

NOTE

HEATER FAIL light should extinguish when hoder ignitus.

Regulate TEMP CONT knob for desired temperature.

Place HEAT-VENT switch in OFF position, to shut down bester

NOTE

With HEAT-VENT ewitch in OFF position, the combustion air blower will continue to operate, cooling and purging the heater, and cutting off automatically when the heater has codied. If

- 1 -

accelerated pooling and purging is desired place writch in VENT position, then return switch to OFF.

Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

HEATER MALFUNCTION

HEAT-VENT switch - OFF.

HTA PWR circuit breaker — Out.

A mattemation in the heater or heater unit controls will cause the heater to become inoperative and result in illumingtion of the HEATER FAIL light. If the mailunction occurs, proceed as follows:

HTR CONT circuit branker - Out.

FIREWALL SHUT OFF RELEASE PULL kneb Out.

Section 4

PERFORMANCE

No change from basic menual.



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

LITTER KITS 206-706-122 OR -324

CERTIFIED JULY 1, 1977

This supplement shall be attached to Model 20683 Flight Manual when Litter Kits til hee been installed.

Information contained furgin supplements information of basic Flight Manual. For Limitations, Procedures, and Performance Data not contained in this supplement, consult basic Flight Manual.

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NOTE

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GENERAL INFORMATION

The Bell Littor Kits (206-706-122 and 206-706-324) each consist of two litter essemblies mounted longitudinally in the left side of draw and passenger compariments, and all stipchment fittings, supports and hardware as installed and secured by Service Instructions 206-7 and 206-65.



LIMITATIONS

LITTER PATIENT

. -

Polients shall be restrained by litter straps,

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after the kit is installed and builgst



NORMAL PROCEDURES

No change from basic manual.

Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

No change from basic monual.



PERFORMANCE

No change from basic manual.

medjusted, if necessary, to return empty weight CG to within allowable firmts.

Section 1

MANUFACTURER'S DATA

WEIGHT AND BALANCE

LOADING DATA

SPECIAL INSTRUCTIONS

The litter location weight ellowable and illuer location weight required charts are "Minage Type" charts. Correct use of the information presented will assure proper load distribution but will not prevent exceeding the 3200 pound (1451.5 kitogramm) gross weight.

With more than 110 pounds (49.9 kilograms) in the baggage compariment, the maximum 260 pound (113.4 kilograms) Niter location weight for each location is allowable.

"Litter facation weight" includes lifter, patient, bette, splints, etc., supported by the reasing points of the sitter

The litter provisions kit is included in weight emply and the helicopter should have a permissible weight empty center of gravity with this kit installed.

NOTE

Weight required to be contered in litter area at station 04 (approximately 11 inches (27.9 continuators) aft of crew compariment buikhead).



- -

DEPENDING ON HELICOPTER WEIGHT AND FUEL LOADING, THE FOLLOWING COMBINATIONS CAN EXCEED 3200 POUNOS (1461.3 Kilograms) gross Weight Which is Not Permissible

LOADING CHARTS

EXAMPLE NO. 1

A 200 pound (90.7 kilograms) pilot and a 150 pound (65.0 kilograms) doctor have 50 pounde (22.7 kilograms) in the baggage compartment. What is the maximum littler lead elloweble?

Using the litter location weight allowable cher) for 50 pounds (22.7 klingrams) baggage compartment weight, the allowable weight at the intersection of the 200 pound (90.7 kilograms) pilot weight column and the 360 pound (60.0 kilograms) attendant line is 495 pounds (224.5 kilograms).

LITTER LOCATION WEIGHT ALLOWABLE CHARTS

WEIGHT (LOS)	PILOT WEIGHT (LBS)			
(AFT R.H. SEAT)	170	200	225	250
C	475	420	370	325
150	460	405	350	310
200	460	400	355	305
250	486	395	850	300

Table 1-1. "O" LOS. BAGGAGE COMPARTMENT WEIGHT

WEIGHT (LBS)	PILOT WEIGHT (LBS)				
(AFT R.H. BEAT)	170	200	225	250	
Ø	500	500	465	415	
150	500	495	450	405	
200	600	490	445	400	
250	500	465	440	395	

Teble 1-3. 100 LBS. BAGGAGE COMPARTMENT WEIGHT

LITTER ATTENDANT WEIGHT (LBS)		PILOT WE	ight (LBS)	
(AFT R.H. SEAT)	170	200	225	250
0	500	800	500	690
150	500	500	500	495
200	500	500	500	400
250	500	500	500	485

LITTER ATTENDANT WEIGHT (Kg)	PILOT WEIGHT (Kg)				
(AFT A.H. SEAT)	77,1	90.7	102.1	113.4	
Ŷ	215.5	190.5	157.6	147.4	
58.0	208.7	183.7	163,3	140.6	
90.7	209.7	181.4	161.0	138.4	
113.4	205.4	179.2	150.0	136.1	

Teble 1-	i. "O" Kg	I BAGGAGE	COMPARTMENT	WEIGHT
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Table 1-5. 22.7 Kg BAGGAGE COMPARTMENT WEIGHT

LITTER ATTENDANT		PILOT WE	IGHT (Kg)	
WEIGHT (Kg) (AFT R.H. SEAT)	77.1	90.7	102.1	113.4
0	225.8	225.5	210.9	18-5,2
6 8 .0	226.0	224.5	204.1	169.7
90.7	225.5	222.3	201,9	181,4
113.4	225.5	220.0	199.5	179.2

Table 1-6. 45.4 Kg BAGGAGE COMPARTMENT WEIGHT

LITTER ATTENDANT WEIGHT (Kg)		PILOT WE	9GHT (Kg)	
(AFT R.H. SEAT)	77.1	80.7	102.1	113.4
Ð	226.8	226.0	226.8	226.8
84.0	226.8	226.8	226.8	224.5
90.7	229.0	228.0	226.8	222.3
113.4	226.8	226.8	226.0	220.0

EXAMPLE NO. 2

A 170 pound (77.1 kilograms) pilot has 150 pounds (68.0 kilograme) in the baggage compartment.

Using the litter location weight required chert for 150 pounde (69.0 hilograme) in the baggage compartment, the required weight is 265 pounds (115.7 kilogramu) for NICÓ.

· •..

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- 1. How much litter location weight is required with the back east empty?
- 2. How much littler location weight is required with a 200 pound (90.7 Hilograma) presenger in the back seat?

LITTER LOCATION WEIGHT REQUIRED CHARTS

LITTER ATTENDANT WEIGHT (LBS)		PILOT WE	IGHT (LES)	
(APT R.H. SEAT)	170	200	225	250
۵	65	Þ	0	0
150	50	0	¢	0
200	45	¢	Q	Q
250	45	Ó	a	Q

Table 1-7. 50 LBS. BAGGAGE COMPARTMENT WEIGHT

LITTER ATTENDANT		PILOT WE	IGHT (LB\$)	
WEIGHT (LOS) (AFT R.H. SEAT)	170	200	225	250
0-	265	200	150	100
160	255	200	150	100
200	255	200	150	100
250	255	200	150	100

Table 1-8. 150 LBS. BAGGAGE COMPARTMENT WEIGHT

Table 1-9. 250 LBS. BAGGAGE CONPARTMENT WEIGHT

LITTER ATTENDANT WEIGHT (LBS)	PILOT WEIGHT (LBS)			
(AFT R.H. SEAT)	170	200	225	250
D	475	420	370	320
150	500	440	380	330
200	500	440	390	340
250	500	450	400	350

Table 1-10.	22.7 Kg BAGGA		AENT WEIGHT Eight (Kg)	
WEIGHT (Kg) (AFT R.H. SEAT)	77.1	90.7	102-1	113.4
0	29.5	ø	٥	Ó
58.0	22.7	0	0	0
90.7	20.4	a	0	0
113.4	20.4	D	۵	0

1.10

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Table 1-11. 66.0 Kg BAQGAGE COMPARTMENT WEIGHT

E)ITTER ATTENDANT WEIGHT (Kg)	PILOT WEIGHT (Kg)			
(AFT R.H. SEAT)	77.1	80.7	102.1	113.4
b	115.7	99.7	58.D	45.4
60.0	115.7	90.7	48.0	45.4
QC.7	115.7	90.7	68.0	45,4
113.4	115.7	90.7	68.0	45.4

Table 1-12. 113.4 Kg BAGGAGE COMPARTMENT WEIGHT

LITTER ATTENDANT		PILOT WE	IGHT (Kg)		
WEIGHT (Kg) (AFT R.H. SEAT)	77.1	80.7	102.1	113.4	
D	215.5	190.5	157.8	145-1	
58.0	226.5	199.6	172.4	149.7	
90.7	226.6	199.5	176.9	154.2	
113.4	226.5	204.1	181,4	158.8	

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BHT-206B3-FMS-3



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

HOIST --- EXTERNAL 206-706-124 OR -126

CERTIFIED JULY 1, 1977

This supplement shall be attached to Model 20683 Flight Manual when Hojel — External bit has been installed.

Information contained herein supplements information of basic Flight Genuel. For Limitations, Procedures, and Performance Data not contained in this supplement, consult basic Flight Manual.

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NOTE

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GENERAL INFORMATION

The Bell Molet Kit (206-705-124 or 206-708-125) consists of a holet motor and winch assembly, mounting freme, master control panel, arew members gendant control, electrical components, wiring, and pli the hardwate necessary to complete the installation. The winch unit of the 205-706-124 Holst Kill containe 100 leet (30.5 meters) and the which unit of the 206-706-128 Holet Kit contains 110 feet (33.5 meters) of usable cobie. Each which unit when actualed has a rate of cable inevel of 50 fest (15.2 meters) per minute. The control panel is edge lighted and contains a HOIST POWER switch, for pliot of crew member holet operation, and a CABLE CUT switch for use in the event of an emergency. The control penel of the 209-708-124 Holef Kit. sise contains an OVERNEAT WARNING light which when illuminated indicates an overtemp condition of the holst motor. installation of the holds will show the pilot or crew member to deliver or pick up cargo from eress that are not auitable for landing the helicopter.

NOTE

Cable Guard KR (205-706-214) shall be installed if holet is to be used with Lightweight Emergency Float Kit (205-705-211).

Section 1

LIMITATIONS

TYPE OF OPERATION

Holat operations shall be conducted under the appropriate operating rules for external loads.

Passenger operations with holet installed are approved if the holet is not used and the holet electrical system is deactivated.

Flight operations requiring use of the hold. ARE PROHIBITED and the system SHALL BE DEACTIVATED when Float Landing Gear, Standard Type (Fixed) 205-705-008 is installed. Flight operations requiring use of the hold are approved with Lightweight Emergency Floats (205-705-211) when Cable Guard Kit (205-705-214) is installed. Simultaneous use of the holat and the external cargo hook is PROHIBITED.

AIRSPEED LIMITATIONS

The object being holded shall be completely in the cabin before forward flight is setablished.

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is installed and ballast modjusted, if nacessary, to return empty weight CG within allowable littlits.

LOADING LIMITATIONS

Holsi londing — Maaimum 300 pounde (136 kilogramm), (Asisr to Hoist Loading Nomograph.)

Section 2

NORMAL PROCEDURES

EXTERIOR CHECK

Cable Guard — Condition and security (if installed).

FUSELAGE CABIN — LEFT BIDE

Helst — Condition, security, wiring connected, Ensure hook firmly scaled against bumper ped. All cabin door — Removed, if hoist is to be used.

INTERIOR CHECK

Crew members holet control — installed, slowed, wining connected.

BEFORE TAKEOFF

NOTE

Perform holet power sneck if holet operations are anticipated.

HOIST POWER CHECK

Prior to takeo() perform holat operation functional check as follows:

HOIBT POWER and CABLE CUT circuit breakers — in.

HOIST POWER switch PILOT.

HOIST OVERNEAT WARNING light --PRESS TO TEST (light ON) then release (208-706-124 Hoist Xit ONLY).

HOIST ewitch, pilots — Press switch Oti (down) to lower hook, approximately twofeet, then UP to raise hook.

HOIST POWER switch --- CREW.

NOIST switch, crewmamber — Press switch DN (down) to lower hook approximately two fact, then UP to reject hook.

HOIST POWER switch - OFF.

Pilot or crewmember — Ensure hook firmly . seated against bumper pad.

HOIST OPERATING PROCEDURE

HOIST POWER switch — PILOT or CREW . position. Establish zero groundspeed over pickup location.

HOIST switch - DN (Down) to lower hook.

NOTE

Allow a 30 second rest period between each ½ cycle (i.e. full up or full down) of operation. Lift holst load slightly above contact surface, by septication of collective pitch, to obtain a some of control (ee).

HOIST switch - UP to raise hoist load.

James quantum data	
CAUTION	
L	

TO PREVENT OVERHEATING AND DAMAGE TO THE HOIST MOTOR ONLY THREE (3) CONSECUTIVE CYCLES (I.E. FULL UP AND FULL DOWN) ARE PERMITTED. AFTER THREE (3) FULL CYCLES OF DPERATION, ALLOW A 40 MINUTE PERIOD OF COOLING. OVERHEATING OF THE 206-706-124 WINCH MOTOR WILL BE INDICATED BY ILLUMINATION OF THE OVERHEAT WARNING LIGHT.

HOIST POWER switch OFF ofter completing hoist operation.

Pilot or stewmember — Ensure hook firmly seeind against bumper pad. ----

AFTER EXITING HELICOPTER

POST FLIGHT CHECK

Holat — Condition and security. Ensure hook firmly seated against bumper pad.

NOTE

After last flight of the day, if the hoist has been used, maintenance action is required.



EMERGENCY AND MALFUNCTION PROCEDURES

In the event of an emergency, LIFT CABLE CUT switch guard and actuate SWITCH to drop the holet load.

Section 4

PERFORMANCE

teo change from basic manual.

Section 1

MANUFACTURER'S DATA

WEIGHT AND BALANCE

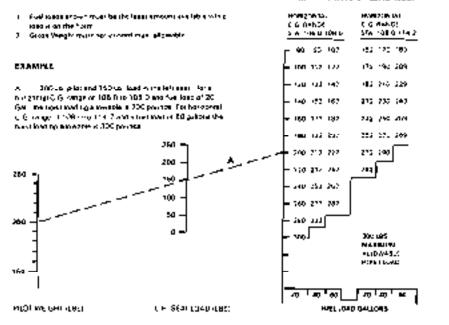
Rater to Holet Loading Noncorreph (figure 1-1) to determine allowable holet load.

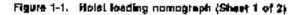
HOIST LOADING NOMOGRAPH

NOTES:

MAXIMUM HOIST LOAD 4,681

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HOIST LOADING NOMOGRAPH METRIC

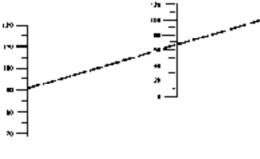
NOTES

 Firel loads shown must be the least smouth evelopie while load is on the hour.

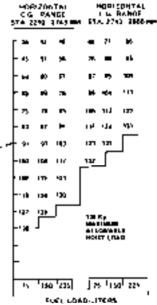
2. Gross Weight must not satisfied while allowable.

SXAMPLE

3. 91 Ke plan and 45 Kg toet in the left set 1.40° Shorizonrel C () range at 2792 to 2743 mm and a lusi teet of 75%. The horizonrel Instang allowable is 91 Kg. For a horizonbel C G. (efge b) 2743 so 2900 mm and a lusi lost of 225 Time total webling elloweble is 138 Kg.



MAXIMUM HOAST LOAD (No.)





LH SEAF LOADING

Figure 1-1. Holet loading nomograph (Sheet 2 of 2)

FAA APPROVED SUPPLEMENT



FLIGHT MANUAL SUPPLEMENT FOR

208-899-415

LOUDHAILER

FAA APPROVED JULY 1, 1977

This supplement shell be estached to the Model 2068 Jet Ranger II Flight Warnus when the 206-999-415 Loudhaller has been that alled.

The information contained herein supplements the information of the basic Filight Manual. For Limitations, Procedures and Performance Data not contained in this supplement consult the basic Filight Menual.

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INTRODUCTION

The LOUDHARLER when inequied in eccontence with Bell Detwing No. 208-899-415 or STC No. SH 15835W, will perent the helicopter crew to direct ground personnel within remaining airborne. The kit contains two speakers, amplifier, power light, switches, microphone and the necessary herdware to complete the inequilipion.

Section 1

LIMITATIONS

TYPE OF OPERATION

The helicopter shaft be equipped with one of the lollowing handing gear configurations: High Said Luncing Gear (208-706-010), High Said Gear With Emergency Rictation (208-705-010), Light weight Emergency Flotation Landing Gear (208-708-211), or Hi-Said Landing Gear-Tubolar Type (208-708-031), when the Loudhalter downerst is watalied.

The LOUDHAILER is approved for insultation in the helicopter for use in directing ground personnel while the helicopter romains altomo. The LOUDHAILER is also approved for intelligion in conjunction with the NICHT BUN SEARCHLIGHT.

The LOUDHALER configuration of the helicopter convita its uso as a five place wiscraft Emited to CAY or NIGHT VFR monicing conditions.

AIRSPEED LIMITATIONS

3000 POUNDS (1360-8 KILOGRAMS) WEIGHT AND BELOW Vine 140 MPH (122 knots) see fevel to 5000 (set. Decrease Vine 4.0 MPH (3.5 knots) per 1000 feet above 5000 feet. Maximum attrade 20.000 feet.

ABOVE 3000 POUNDS (1350.5 KILÓGRANŠ) GROSS WEIGHT

No change from basic helicopter limitations for these grass weights.

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after squipment is installed and beliest readjusted. If necessary, to return empty weight CG to within allowable limits.

ELECTRICAL LOADING LIMITATIONS

All electrical equipment being operated shall not repair in a loadmappy reading in excess of 0.7 electrical loading.

PLACARD

With LOUDHAILER SPEAKERS INSTALLED the Vrie is 140 MPH (122 knots).

- -

Section 2

NORMAL PROCEDURES

GROUND FUNCTIONAL CHECK

AMPLIFIER CHECK

BAT switch - Op.

PA SYST circuit breaker - In.

Power-light — Prans. light-Milminet+d.' release. light-Exsinguished.

Prover switch — ON and power indicator light. On:

Power switch - OFF/REMOTE position.

Quin control switch — ROTATE to 4-REM. contribut.

REMOTE CONTROL FUNCTIONAL CHECK

Gain control switch - OFF position -

Power switch - ON, indicator right fluminated.

Microphane — Speak into mike ang slowiy rospte gain control umil output mater indicator is in approximately metposition. IThis will be the normal gain secting for in-Highr use.]

Power Lwitch - OFF.

IN-FLIGHT LOUDHAILER OPERATION

Remore control power switch - DN. light likenineted.

Microphone — Speak into mike indjact gain of required).

Remote control power switch — OFF to descrives system



EMERGENCY AND MALFUNCTION PROCEDURES

No Change



PERFORMANCE

No Change



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

DUAL ROTOR BRAKE SYSTEM 206-706-034

CERTIFIED JULY 1,1977

The supplement shall be altached to Model 20583 Flight Manual When Dust Rotor Brake System. All has been Installed.

Information contained herein supplements information of basic Flight Manuel. For Limitations, Procedures, and Performance Date not contained in this supplement, consult basic Flight Manuel.

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GENERAL INFORMATION

The Bell Dual Rotar Brake System (206-706-034) consists of a brake disc, dual brake assembly, master cylinder, hose assemblies, tube assemblies, operating handle, and the required fittings and hardware to complete the installation. The rotar brake system when installed will permit reped deceleration of the rotar after engine shufdown

FAA APPROVED



LIMITATIONS

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is installed and ballast readjusted, if necessary, to trium amply weight CG to within allowable timits.

PLACARD

ENGAGE BOTOR BRAKE BETWEEN 38% & 30% ROTOR RPM.



NORMAL PROCEDURES

ENGINE PRE-START CHECK

Rotor brake handle — Up and Latched.

ENGINE SHUTDOWN PROCEDURE

ON ICE ON OTHER BLIPPERY OR LOOSE SURFACE TO PREVENT ROTATION OF HELICOPTER.

Apply rotor brake between 38% and 30% rotor RPM.

CAUTION

....

AVOID RAPID ENGAGEMENT OF ROTOR BRAKE IF HELICOPTER IB

Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

No change from basic manual.



PERFORMANCE

No change from basic manual.

BHT-206B3-FMS-7



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

STABILITY CONTROL AUGMENTATION SYSTEM (SCAS) 206-706-305

CERTIFIED JULY 1, 1977

This supplement shall be attached to Nodel 20603 Plight Manual when Stability Control Augmentation System (SCAS), kit has been insiglied.

Information contained herein supplements information of besic Flight Manual. For Limitations, Procedures, and Performance Data not contained in this supplement, consett basic Flight Manual.

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ROTORCRAFT CERTIFICATION OFFICE "EDERAL AVIATION ADMINISTRATION FT. WORTH, TX 76193-0170

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GENERAL INFORMATION

The Bell Stability and Control System Kit (200-708-305) consists of a sensor-amplifier unit, serve cylinders, transducer assembly, control head and panel, electrical cables, circuit breakers, awitches, and the required hardwore.



LIMITATIONS

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is installed and baltast readjusted, If necessary, to return empty weight CG to within allowable limits.

Section 2

NORMAL PROCEDURES

BEFORE TAKEOFF

SAS INV circuit breaker - Ri.

SAS CONT pircuit branker - IN.

SAS PWR switch -- Push in (Amber light Huminatee).

Werm up until Red light extinguishes.

9A9 CYCLIC switch — Push in (Green light Muminetes).

SAS YAW switch — Push in (Green light) Burninsten).

SAS REL switch (cyclic stick) — Prese and Referee. (CYCLIC and YAW lights should extinguish — NO GO lights above cyclic and yaw awitches should be steady or flashing Red.)

SAS CYCLIC and YAW switches — Push In (Green lights (liuminate).

IN-FLIGHT OPERATION

SAS can be menually overridden or disergaged during any phase of flight. To disengage SAS during flight, deprese SAS REL switch.

To reactivate SAS during Night, push SAS. CYCLIC and YAW switches in.

NOTE

If system is to be disangaged for an extended period during flight, push SAS PWR switch in.

ENGINE SHUTDOWN

Piece all SAS switches in the Off position. prior to engine shutdown.

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EMERGENCY AND MALFUNCTION PROCEDURES

ERRATIC, PITCH, ROLL OR YAW OSCILLATIONS

SAS REL switch — Press. If condition still exists, land as soon as practical.

HYDRAULIC ACTUATOR Failure (Lost Motion in Control)

SAS REL switch — Press. Land as soon as practical (louch down with allow forward speed).



PERFORMANCE

No change from basic monual.



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

FLOAT LANDING GEAR STANDARD TYPE (FIXED FLOATS) 206-706-008

CERTIFIED JULY 28, 1977

This supplement shall be attached to Model 20583 Fright Manual when Float Landing Gear Standard Type (Fixed Floats) kit has been installed.

Information contained heroin supplements information of basic Flight Manual For Limitations, Procedures, and Performance Date not contained in thes supplement, consult basic Flight Manual.

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GENERAL INFORMATION

The Bell Float Landing Gear Kit (206-706-008) consists of two streamlined multicell inflatable floats, float mounting tubes, mount crosstubes, adapters for relocating the position lights, attachment fittings, and all hardware required to equip the helicopter for water operation. A meangular plate is also included in the kit to mount on the tall skid for controllability purposes. Relocation of the position lights to the end of the float forward crosstube will permit the helicopter to be operated under day or night VPR flight conditions.



LIMITATIONS

TYPE OF OPERATION

This belicopter, with standard float landing gear (notalled, is cartified for water operations upday day or night VFR renicing conditions.

INTENTIONAL POWER-OFF LANDINGS ON LAND ARE PROHIBITED.

Flight operations requiring use of the external holat are PROMIBITED and the system SHALL BE DEACTIVATED.

WEIGHT LIMITATIONS

Maximum approved grose weight 3000 pounds (1350-3 kilograms).

AIRSPEED LIMITATIONS

Vne. 120 MPH (104 knote) eas level to 3000 feet. Above 3000 feet affitude, depresse Vne 5.0 MPH (4.4 knote) per 1000 feet.

Section 2

NORMAL PROCEDURES

FLOAT PRESSURE VARIATION VERSUS TEMPERATURE AND/ OR ALTITUDE CHANGE

Température changes, when maving from warm hanger to cold outside or vice versa, result in changes to inflation preseure.

Yne 90 MPH (76 knole) with standard floats and jett forward door only removed.

ALTITUDE LIMITATIONS

Maximum operating — 15,000 feet pressure attitude.

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is installed and ballast readjusted, if neossatary, to return empty weight CG within allowable limits.

Refer to Float inliation Charl (figure 2-1).

Pressure changes, when moving from one altitude to enother, size result in changes in inflation pressure.

FLOAT INFLATION

Do not exceed an 5000 foot increase in sNitude or 5000 foot decrease in anitude from departure point. If a granier attitude change is desired, establish a new departure slitude/temperature encouls and readjust float pressure accordingly.

The maximum inflation pressure is 4.5 pelg. For minimum inflation pressure relar to Float inflation Chart (figure 2-1).



DO NOT OVER INFLATE.

NOTE

If the combination of pressure stillude change and/or embient temperature extremes is not shown on the Float inflation Chart, subblish a new departure envoute, and readjust the float pressure as required.

Extremely cold wreather may necessitize a cold soak outside the hanger prior to adjusting Roat pressure.

ENGINE STARTING AND RUNUP

CAUTION

ANCHOR OF MOOR HELICOPTER Prior to starting the -~

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ENGINE TO PREVENT ROTATING. Due to torque, before tail rotor reaches effective apm.

TAXIING

Taxi of elever epeed to prevent float bowe trom nosing under.

NOTE

Safe operation can be accomplished in waves up (a 18 inches (45.7 continuitors) (inough to orest) and 360° turns can be executed in winds up to 20 MPH (17 knots).

IN-FLIGHT OPERATIONS

CAUTION

OPERATION OVER LAND IS NOT RECOMMENDED. FAA APPROVED

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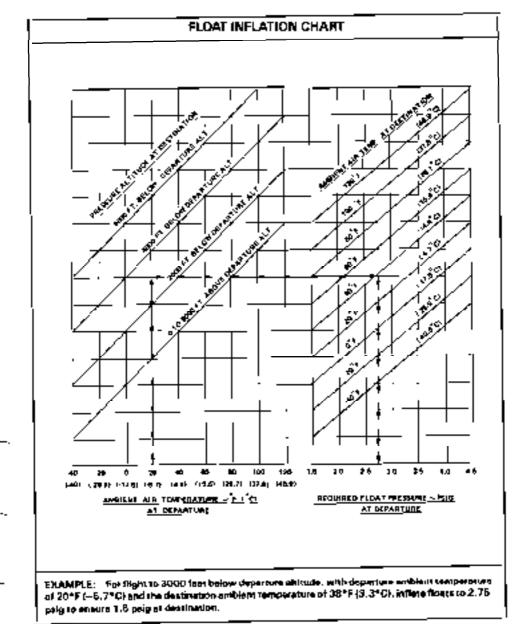


Figure 2-1. Flogt Inflation chart

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Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

ENGINE FAILURE



OVER LAND ENERGENCY Power-off Landings Will Require Touchdown at Zero (0) ground speed

Maximum eirspeed for steady sinteautorotation — 100 mph (87 knots).

ENGINE FAILURE, OVER WATER — NIGHT

Establish an autorotative gilde at 60 MPH (52 knote) IAS, for minimum rate of descard, and turn on landing light.

Section 4

PERFORMANCE

Refer to Particle Separator Supplement when the particle separator is installed. At 100 feet measure a moderate cyclic finre to reduce airepeed to approximately 30 MPH (26 knots).

Adjust collective and cyclic pitch sufficiently to perform a low apead cushioned fouchdown at a slight noncup stitude.

NOTE

Night autoratelive touchdown landings to water have been demonstrated at alrepeed to 33 MPH (30 knots).

AIRSPEED INSTALLATION CORRECTION

NDICATED A/S MPH	CALIBRATED A/S MPH	INDICATED A/S (KNOTS)	CALIBRATED A/6 (KNOTS)
40	42	(36)	(36.6)
46	48	(39)	(40)
50	\$0.5	(43.5)	(44)
60	60	(52)	(52)
70	559	(61)	(50)
60	78	(69.6)	(68)
90	54	(70)	{ 76 .5}
100	98	(87)	(89)
110	107,5	(95.5)	{\$3.6)
123	120	(107)	(104)

Table 4-1. FLOAT LANDING GEAR

NOTE

Indicated Airopeed (IAS) corrected for position and instrument error equals Calibrated Airopeed (CAS), Determine Calibrated Airopeed (CAS) from the above table.

RATE OF CLIMB — DOORS on

Reduce rate of climb data from besic Plight Manual by 490 feet per minute when operating with standard float lending gear.

RATE OF CLIMB - DOOR(S) OFF

Reduce rate of climb chart data from basic Flight Menual by A RATE OF CLIMB value found in ligure 4-1, when operating with standard front landing gear and any combination of cable doors removed.

HOVER CEILING CHARTS

NOTE

The Nover Calling charts presented in this manual reflect performance with the 65 inch diameter tail rotor (PM 206-018-201) installed. For performance with the 62 inch diameter tail rotor (PA 205-010-750), refer to 5HT-20683-FMS-22.

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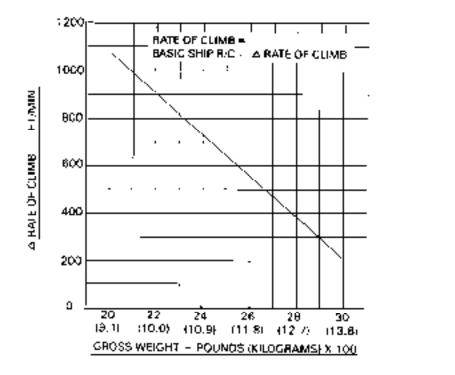


Figure 4-1. Gross Weight - Pounds (Kilograms) x 100

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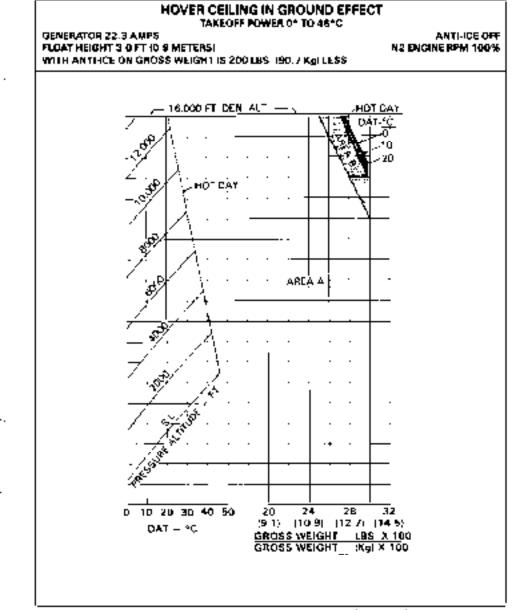
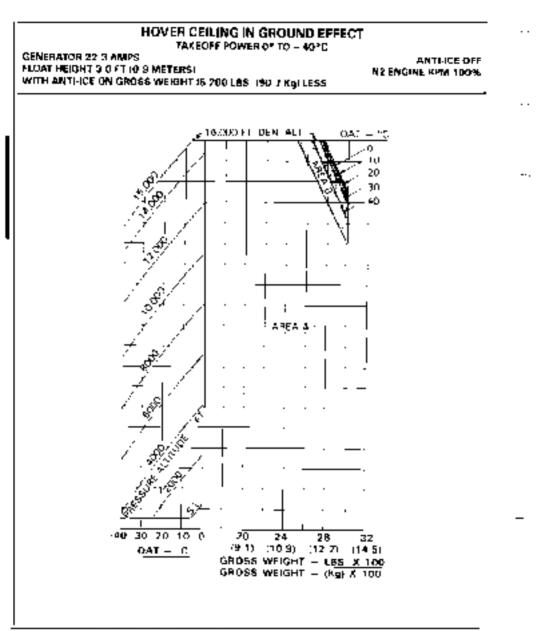


Figure 4-2. Hover celling in ground effect (Sheet 1 of 2)







ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT CARGO HOOK 1500 POUND (681 KILOGRAMS) CAPACITY 206-706-335

CERTIFIED JULY 26, 1977

This supplement shell be stlacked to Model 205B3 (light Menual when cargo hook has been installed.

Information conteined nevels supplements information of basic Flight Manual For Limitations, Procedures, and Performance Data not constined in this supplement, consult basic Flight Menual.

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GENERAL INFORMATION

Bell Cango Hook Kii (206-706-035) consists of a trame and hook assembly, electrical and manual(emergency) release system, and electring hardware. A bungee shock cord is attached to the cargo hook which provides sutomatic stowing when hook is not in use.

NOTE

A swivel link to not supplied with Cargo Hook Kit; however, it is recommended that a link be installed between suspension cable and cargo look.

Cargo hook is located at station 108.5 iN (2785.9 mm).



LIMITATIONS

TYPE OF OPERATION

Operations of the helicopter with no load on the external cargo hook is authorized under the standard airworthinees certificate without removing the unit from the helicopter

External cargo operations shall be conducted in accordance with appropriate operating rules for external loads under VPR conditions.

WEIGHT LIMITATIONS

Maximum approved gross weight is 3350 pounds (1519.5 kilograms) including external load.

Maximum external cargo load la 1560. pounda (581 kHograma).

AIRSPEED LIMITATIONS

Vita is 91 MPH (78 knots) for gross weights above 9000 pounds (1350.8 kilograms). CAUTION

THE AIRSPEED WITH EXTERNAL CARGO IB LIMITED BY CONTROLLABILITY. CAUTION EMOULD BE EXERCISED WHEN CARRYING EXTERNAL CARGO, A S THE HANDLING CHARACTERISTICS MAY BE AFFECTED DUE TO THE SIZE. WEIGHT, AND SHAPE OF THE CARGO LOAD.

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined ofter kit is installed and ballast medjusted, if necessary, to return empty weight CG within allowable binits. Refer to Esternal Load Center of Gravity vs Groes Weight chart (lique 1-1).

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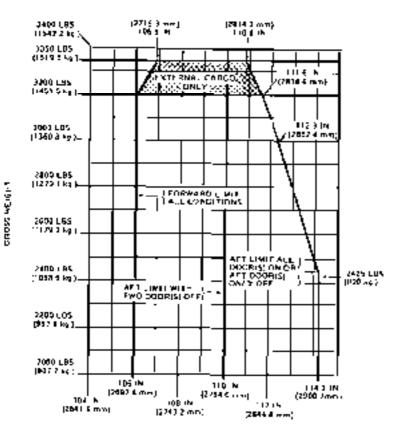


Figure 1-1. External load center of gravity vs gross weight

2



JUDGATED ON CYCLIC STICK.)



(LOCATED ON T HANDLE OF MANUAL RELEASE CABLE.)



(LOCATED ON UNDER SIDE OF MELICOPTER ON HOOK FRAME ASSEMBLY.)

Figure 1-2. Placards and markings

Section 2

NORMAL PROCEDURES

GROUND CREW INSTRUCTIONS

v

Instruct ground crewmember to discharge helloopter static electricity before attaching cargo by touching the air/rame with a ground wire, or if a metal sting is used, the hook-up ring can be struck against the cargo hook. If contact has been to at after initial grounding, the helicopter should be electrically regrounded and. If possible, conject maintained until hook-up is completed.

Instruct ground personnel to check primary load ring and secondary load ring for condition and proper size (Table 2-1). Check for proper ngging. USE OF INAPPROPRIATELY SIZED LOAD RINGS MAY RESULT IN LOAD HANG-UP WHEN LOAD RING IS TOO SMALL OR INADVERTENT LOAD RELEASE IF LOAD RING IS TOO LARGE.

WARNING

Check that only one primary ring is ceptured in the load beem and only one secondary wing with correct cross-section dimension is captured in the primary ring. Additional rings, stings, or shackles shall be stached to the secondary load ring. See figure 2-1.

PRIMARY RING. Inside diameter	PRIMARY RING CROSS SECTION	MAXIMUM CROSS Section of Secondary Ring	
2.38 to 2.50 in.	1.D In.	0.439 In.	-
(60.452 to 83.50 mm.)	(25,4 mm.)	(11.12 mm.)	
2.50 to 2.75 in,	1.0 in.	0,625 Ip.	
(63.50 to 69.85 mm.)	(25.4 mm.)	(15.88 mm.)	·

Table 2-1. RING SIZE - CARGO HOOK PM SP-4232-5

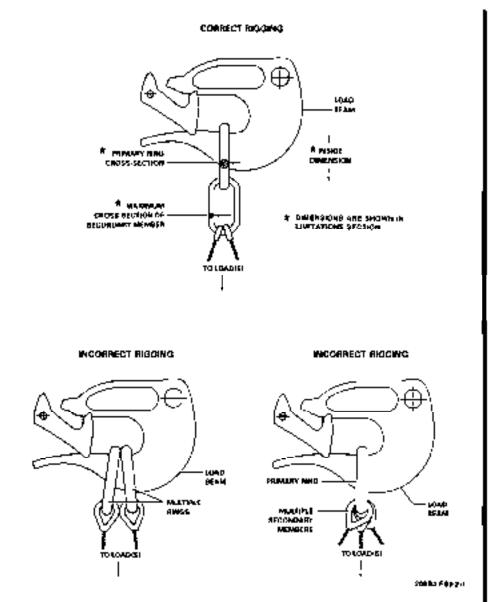


Figure 2-1. External load rigging

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EXTERIOR CHECK

Cargo suspension assembly — Condition and security.

Cargo aling — Condition, proper length.

ENGINE PRESTART CHECK

CARGO HOOK circuit breaker -- In.

BAT switch - On,

Cyclit CARGO RELEASE switch — Press and hold; pull down on cargo hook; hook should open. Release switch and hook should close and lock.

BEFORE TAKEOFF

Cargo — Secured; sling attached to cargo.

Ground crewmember — Positioned as required

TAKEOFF



AVOID CRITICAL RELATIVE WINDS WHILE PERFORMING CARGO OPERATIONS. REFER TO BHT-20583-FM-1.

Nover helicopter al sufficient beight to allow crewmember to discharge statle electricity and to stach cargo sling to eargo hook

Ascend vertically directly over cargo, then slowly lift cargo from surface. Pedals — Check for adequate directional control.

Haver power — Check lorgue required to hover with external load.

Takeoff into the wind if possible, allowing edequate shing load clearance over obstaclos.

IN-FLIGHT OPERATION

NOTE

Control movements should be made smoothly and kept to a minimum to prevent oscillation of sling load.

Airspeed — Within limits for adequate controllability of referentiation.

Flight path — As required to avoid flight with external load over any person, vehicle or structure.

DESCENT AND LANDING

Flight path and approach angle — As required for wind direction and obstacle clearance.

Terminate approach to a high hover. When stabilized at a hover, descend slowly until dargo contacts surface. Maintain tonsion on sling.

Cyclic CARGO RELEASE switch — Press. to release sling from book.



EMERGENCY AND MALFUNCTION PROCEDURES

CARGO FAILS TO RELEASE ELECTRICALLY

in the event that the cargo hook will not release the sling when the cyclic CARGO RELEASE switch is engaged, proceed as follows: Maintain tension on sling.

Pull EMER CARGO RELEASE PULL mechanical release handle to drop cargo.



PERFORMANCE

Refer to Particle Separator Supplement (BNT-20683-FMS-12) when the particle separator is installed

- HOVER CEILING CHARTS
- For estimated cargo operations refer to the hover calling charts in this supplement for hover performance and use of these charts.

NOTE

The Nover Ceiling charts presented in this manual reflect performance with the 65 (neh diameter tail rotor (P/N 208-016-201) installed. For performance with the 52 such diameter tail rotor (P/N 205-010-750), rater to EMT-20583-FMS-22.

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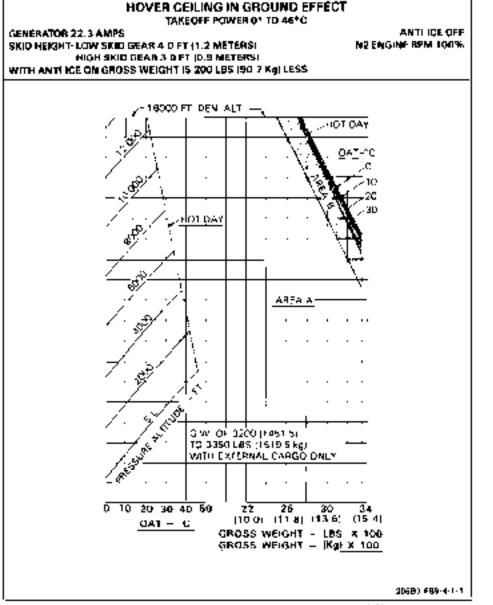
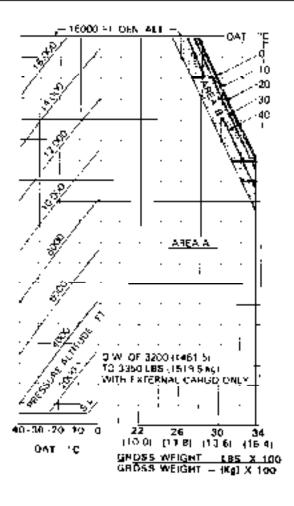


Figure 4-1. Mover celling in ground affect (Sheet 1 of 2)

HOVER CEILING IN GROUND EFFECT TAKEOFF POWER 0° TO -40°C

GENERATOR 22 3 AMPS 5KID HEIGHT. LOW SKID GEAR 4 0 FT 11 2 METERS) NIGH SKID GEAR 3 0 FT 10 9 METERS) WITH ANTI-ICE ON GROSS WEIGHT IN 200 L69 190 7 Kg/ LESS ANTD-ICE OFF N2 ENGINE RPM 100%



20583-259-6-1-2

Figure 4-1. Hover califing in ground effect (Sheet 2 of 2)

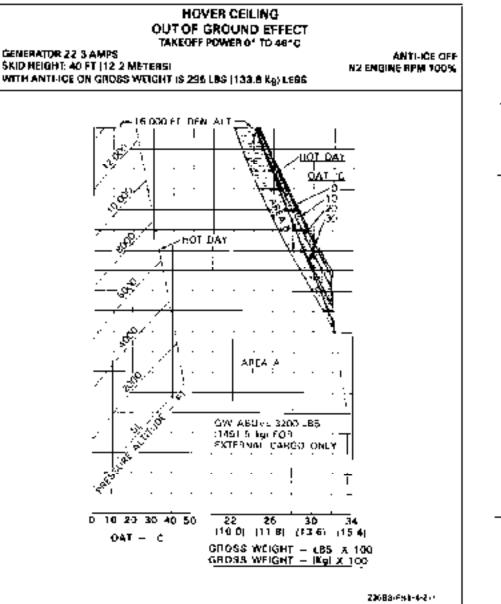


Figure 4-2. Hover ceiling out of ground effect (Sheet 1 of 2).

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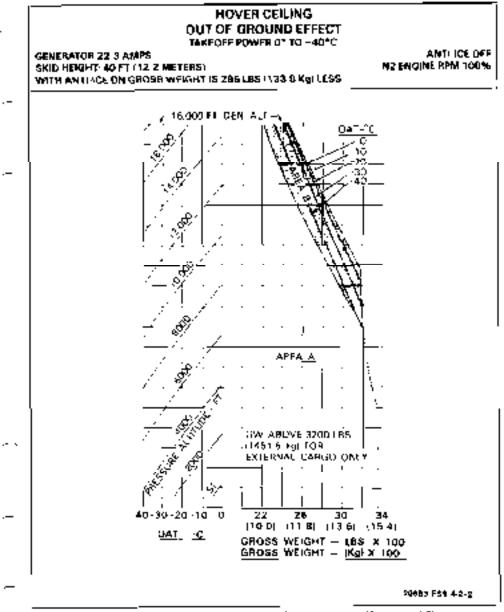


Figure 4-2. Hover celling out of ground effect (Sheet 2 of 2)

BHT-206B3-FMS-10



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT DEFLECTOR KIT ---- ENGINE AIR INDUCTION SYSTEM 206-706-136

CERTIFIED JULY 28, 1977

This supplement shall be attached to Model 20683 Flight Manual when Deflector Kit — Engine Air Induction Systemhas been installed.

Information contained heren supplements information of basic Flight Manual For Limitelions, Procedures, and Performance Data not contained in this supplement, or other applicable supplements, consult basic Flight Monuel

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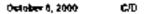
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GENERAL INFORMATION

The Deflector Kit (205-705-136) consists of the deflector baffle assemblies, flow vanes, fairing assembly, and all required items and hardware to complete installation.



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Section 1

LIMITATIONS

TYPE OF OPERATION

The Particle Separator Engine Air Induction System (BHT-20683-FMS-12) and Engine (Automatic) Re-Ingolition system (BHT-20683-FMS-18) shall be installed in conjunction with Deflector Kit when conducting operations in falling and/or blowing snow and the following limits opply:

- Take-off is prohibited with any snow or ice present in the initial or plenum areas.
- Ground operations and hover flight time is limited to 20 minutes total duration per occurrence. Ground operations at idle power (twist grip at idle) shall not exceed twe (5) minutes. If five (5) minutes idle power time limit is exceeded or ground and hover operations exceed 20 minutes total, belicopter shall be shut down and inspected per Section 2, EXTERIOR CHECK.

NOTE

Particle separator is more efficient at 100% rpm and hover power than at idle. Flight operations are prohibited when visibility in falling and/or blowing snow is less than onehalf (1/2) statute mile.

OPERATIONAL EQUIPMENT LIMITATIONS

The Particle Separator shall be installed in the helicopter when the Deflector Kit and Engine (Automatic) Re-Ignition systems are installed.

The Deflector Kit shall be removed at OAT of 80°F (26.7°C) and above. Reter to Particle Separator supplement (BHT-20683-FMS-12) when Deflector Baffles are removed

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is instatled and ballast readjusted, it necessary, to return weight empty CG within allowable limits.

1



NORMAL PROCEDURES

OPERATION IN FALLING OR BLOWING SNOW

EXTERIOR CHECK

Immediately before each flight, thoroughly check cabin root, transmission cowling, dellector baffles, and engine air intake areas. All areas checked must be clean and tree of accumulated show, slush and los before each llight.

Check engine air plenum ohamber through the plexiglass windows on each side of the inlet cowling for show, clush or ice, paying particular attention to the firewalls, rear face of the Particle Separator, bottom corners, and flow vanes. Clean theroughly before each flight.



AFTER EXITING HELICOPTER

FAILURE TO INSTALL ENGINE INLET COVERS COULD ALLOW FALLING/BLOWING SNOW TO ENTER THE PARTICLE SEPARATOR PLENUM.

Install protective covers (engine inlet, exhaust, and pitot tube) during any exposure (o failing end/or blowing snow during non-engine operation.



EMERGENCY AND MALFUNCTION PROCEDURES

No change from basic menual.

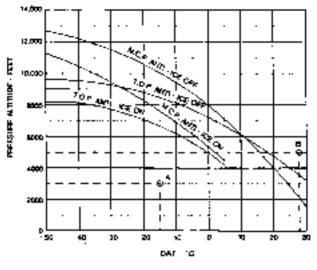


Section 4 PERFORMANCE DETERMINATION OF PERFORMANCE VARIATION FOR DEFLECTOR KIT WITH PARTICLE SEPARATOR Allison Model 250-C20B or 250-C20J Engines EXAMPLE (A): When power condition curve is to the right of the altitude/ temporature intersection, there is no lose of performance from that shown for perticle separator only configuration." EXAMPLE (B): When power condition curve is to the left of the elititude) temperature intersection, hover gross weight is 120 lb less and rate of climb is 170 frimen less then thei shown for the particle separator only configuration. Refer to Particle Separator Engine Air Induction System (BH7-205B3-FMS-12) Performance Data for Power Check, Rate of Climb and Hover Capability charts. POWER CHECK PROCEDURE

Refer to Snow Particle Separator Engine Air Induction System (BHT-20683-FMS-12) Performance Data for Power Check Procedure. With Onliector kit installed, reduce requiring Power Check torque by 3% to determine minimum torque evalighte at a hover.

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October 6, 2000

BHT-206B3-FMS-11



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

HIGH-SKID GEAR WITH EMERGENCY FLOTATION, WHICH INCORPORATES AUTOMATIC ARMING FEATURE 206-706-010

CERTIFIED

JULY 28, 1977

This supplement shall be attached to Nodel 20093 Flight Manual when High-Skid Gaar with Emergency Flotation, which incorporates Automotic Arming Feature – kit has been installed.

Information contained herein supplements information of basic Flight Manual. For Limitetions, Procedures, and Performance Data not contained in this supplement, consult basis Flight Manual.

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GENERAL INFORMATION

The High-Skid Geer with Emergency Flotation Kit (208-705-010) consists of a high-skid landing geer, emergency flotals attached to the main skid parsets, initiation system, nevigation lights, and attaching hardware, installation of this kit permits operation over fand or water. Flotal infinition time is approximately 5 seconds.

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LIMITATIONS

TYPE OF OPERATION

Operations with the emergency floats infinited is limited to flight to a servicing facility for repecking and recharging the system.

The floats and covers must be installed for all flight operation.

Flight operations over land or water are approved.

AIRSPEED LIMITATIONS

Maximum inflation sinspeed — 70 MPH (61 Imole).

Vie with Roads initiated 100 MPH (87 knots) with all doors on or 50 MPH (52 knots) with one or both all doors off.

WEIGHT LIMITATIONS

Maximum approved gross weight — 3200. pounds (1451.5 kilograms).

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is installed and balast readjusted, If neanessary, to return empty weight CG. within showable limits.

PLACARDS

During the inflation cycle, undeersbie piching will occur at sinspeede above 70 MPH (61 knote).

AIRSPEED LIMITATIONS:

INFLATABLE FLOAT KIT,

INFLATION ABOVE 70

M.P.H. PRONIBITED.

INFLATED YHE 100 M.P.H.

REDUCE YNE 5 M.P.H. PER

1000 FT ALT ABOVE 3000 FT.

(Located on center console)

FLOAT

ARMING ABOVE 70 MPH PROHIBITED

(Located on instrument panel)

1

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Section 2

NORMAL PROCEDURES

EXTERIOR CHECK

Floate stowed.

Nitrogen lines - Condition and security.

Float covers clean and secured.

Nilrogan bottle - prestvire 2800 to 2900. PSI.

Canon plug - Check security.

IN-FLIGHT OPERATIONS

OVER WATER OPERATION

FLOAT POWER switch - On.

FLOAT POWER coulies light ---Illumineled.

CAUTION

DURING FLIGHT AT ALTITUDES ABOVE 400 FEET AND AT AIRSPEED OF 70 MPH (61 KNOTS) IAS AND ABOVE, THE SYSTEM SHOULD BE DEACTIVATED BY POSITIONING THE FLOAT POWER SWITCH TO THE OFF POSITION.

OVER LAND OPERATION

FLOAT POWER switch - Off-

LANDING - TOUCHDOWN

WARNING

RUN-ON LANDINGS ON OTHER THAN A HARD FIRM SURFACE SHOULD BE EXERCISED WITH CAUTION, DUE TO THE INCREASED GROUND CONTACT AREA OF THE SKID FANELS.

NOTE

Tell-low run-on landings should be avoided to prevent noss-down pitching.



EMERGENCY AND MALFUNCTION PROCEDURES

ENGINE FAILURE — OVER WATER

Airspeed — 70 MPH (81 knots) or less.

FLOAT POWER coutien (ight likuminaled.

CAUTION

DO NOT INFLATE FLOATS MORE THAN 5000 FEET ABOVE ANTICIPATED LANDING TERRAIN.

FLOAT INFLATION switch Pull On.

NOTE

With PLOAT POWER switch On, illogt inflation system is successfully armed when ENGINE OUT light is bluminated and Audio is On.

NANUAL ARMING INFLATION SYSTEM

The manual initiation arming system will over-ride or beck-up the sulometro inflation arming system.

This system can be used, when desired or necessary, to perform a water landing for processionary reasons and shall be eccomplished as follows:

Airspeed - 70 MPH (61 knots) or lass.

- -

FLOAT POWER caution light — itiuminated.

MANUAL ARM which — LIN guard and more which to CM.

CAUTION

DO NOT INFLATE FLOATS MORE Than 5000 feet above Anticipated Landing Terram.

FLOAT INFLATION switch - Pull On.

AFTER EMERGENCY WATER Landing

GROGS WEIGHT 3000 POUNDS (1380.8 Kilograms) or less

After landing, check the electric lor possible damage.

if mellunction was cause of landing, correct mellunction.

If no damage has becaused to alread and multimotion has been corrected, the aircraft can be forried to the nearest maintenance facility to repack floats and charge system. The forrying aircoped is restricted to 100 MPH (87 knots) with all doors on or to 60 MPH (82 knots) with door or doors off.

GROSS WEIGHT ABOYE 2000 POUNDS (1360.8 KILOGRAMS)

After landing, aircraft must not be flowe until the aircraft has been moved to nearget maintenance facility.

Check the electric for possible deniege.

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il mailupolion was cause of landing, correct mailupolion

Repack floats and charge system.

ENGINE FAILURE, OVER WATER - NIGHT

Establish an autorotative glide at 60 MPH (52 knots). For minimum rate of descent, and turn on landing light. At 100 lest execute a moderate cyclic flare to reduce alregeed to approximately 30 MPH (25 knots).

Adjust collective and oyolic pitch sufficiently to perform a low speed cushioned touch down of a slight noar-up shilude.

NOTE

Night autorolative touch down landings to water have been demonstrated at airspeeds to 35 MPH (30 knots).

Section 4

PERFORMANCE

Auler to Particle Separator Supplement (BHT-20683-FMS-12) when the particle reparator is installed.

HOVER CEILING

Out-of-ground aftect hovering performance is the same as basic helicoptar. In-groundeffect hovering performance is shown onthe following graphs.

NOTE

The Hover Calling charls presented in this manual reflect performance with the 65 (neb dismater tail rotor (P/N 200-016-201) installed. For performance with the 62 inch diameter tail rotor (P/N 2060-010-750), refer to BHT-20503-FMS-22.

FAA APPROVED

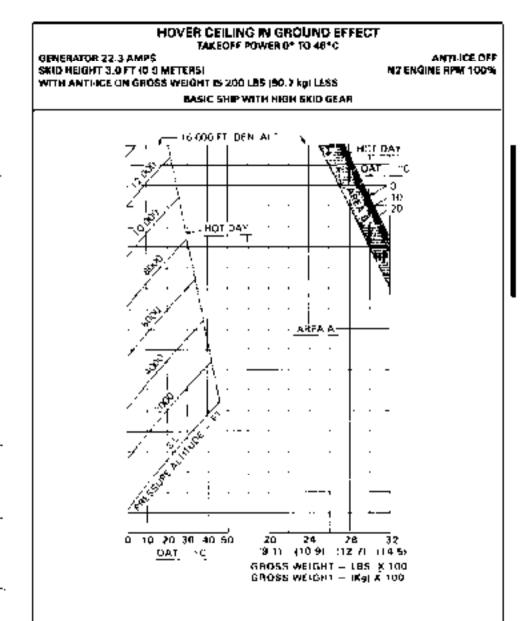
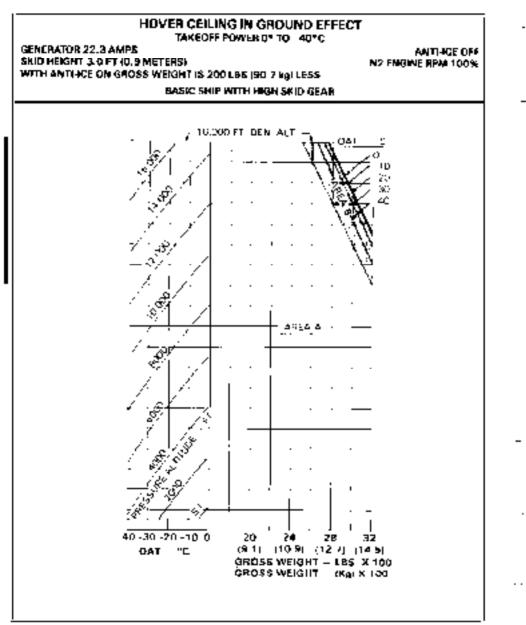
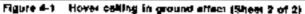


Figure 4-1. Hower ceiling in ground effect (Sheet 1 of 2)

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ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT PARTICLE SEPARATOR — ENGINE AIR INDUCTION SYSTEM 206-706-200 OR 206-706-201

CERTIFIED JULY 28, 1977

This supplement shall be attached to Model 20683 Flight Manual when Particle Separator — Engine Air Induction System kit has been installed.

Information contained havein supplements information of basic Flight Manuel. For Limitations, Procedures, and Performance Data not contained in this supplement, or other applicable supplements, consult basic Flight Manuel.

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NOTICE PAGE

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GENERAL INFORMATION

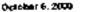
The Particle Separator Kits (206-708-200 or 208-708-201) consist of the particle separator, bleed or tubing and hose, electrical cable, and required hardware to complete instellation.



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Section 1

LIMITATIONS



TYPE OF OPERATION

The Engline Air Induction System Deflector Kit (BHT-20683-FMS-10) and Engine (Automatic) Re-Ignition System (BHT-20583-FMS-18) shall be installed in conjunction with Particle Separator Kit when conducting operations in talking and/or blowing snow and the following limits apply:

- Take-off is prohibited with any snow or ice present in the inlet or pignum areas.
- 2 Ground operations and hover flight time is limited to 20 minutes total duration par occurrence. Ground operations at idle power (livest grap at idle) shall not exceed five (6) minutes. It live (5) minutes idle power time limit is exceeded or ground and hover operations exceed 20 minutes total, helicopter shall be shull down and inspected per Section 2, EXTERIOR CHECK.

NOTE

Particle separator is more efficient at 100% spin and hover power than at wile. Flight operations are prohibited when visibility in falling and/or blowing snow is less than onehalf ('//) statute mile.

OPTIONAL EQUIPMENT LIMITATION

Use basic helicopter performance data when the Particle Soparator is removed and the engine air Intake acreen is reinstalled.

The Deflector Batfles shall be removed if the Particle Separator is removed.

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is installed and ballest readjusted, if necessary, to return empty weight CG within allowable limits,



NORMAL PROCEDURES

EXTERIOR CHECK

BEFORE EACH FLIGHT WHEN OPERATING IN SNOW CONDITIONS

Immediately before each flight. Ihoroughly shock cable root, transmission cowling, deflector ballies, and engine intoks areas. All areas chucked must be clean and free of accumulated show, stush, and ice before each flight

Check engine air plenum chamber through the plexigless windows on each eide of the liviet covining for snow, stush, or ice, paying particular attention to the firewalls, rear face of the Particle Separator, bottom corners and flow varies. Clean thoroughly before each flight.

Section 3

AFTER EXITING HELICOPTER



FAILURE TO INSTALL ENGINE INLEY COVERS COULD ALLOW FALLING/BLOWING SNOW TO ENTER PARTICLE SEPARATOR PLENUM.

Install protective covers (ongine intel, exhaust, and pitot tube) during any experience to failing snow and/or blowing snow during non-engine operation.

EMERGENCY AND MALFUNCTION PROCEDURES

No change from basic manual.

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Section 4

PERFORMANCE

PERFORMANCE DATA

With the particle separator MI, the maximum power available is slightly less than that obtainable with a standard intel, when operating si TOT limit. The helicopler performance is, therefore, also leas with the particle separator kit installed. This power loss is caused by an increased pressure drop in the intel, and compressor bleed air used to purge the particle separator. Rolor to Power check chart (figure 4-1).

POWER CHECK PROCEDURE

The Power Check Chart indicates the minimum percent torque that must be available from an engine meeting the minimum Allison specification. The engine must develop these values in order to meet the performance data contained in this flight manual.

The takeoff power Nmits of the 250-C20B or 250-C20J engine are:

Maximum lorque — 100% (5 minutes). Maximum TOT (1urbine outlet temperature) — 810°C (5 minutes). Maximum gas producer RP31 (N1) — 105%.

NOTE

Accurate power checks may be accomplished in a hover, in a stabilized 60 MPH (52 knots) LAS climb or in level flight. Power checks should only be conducted in a hover when altitude. temperature, and gross weight permit sate hovering height. Refer to Height-Velocity Diagram in BHT-20683-FM-1. More accurate ohecks are achieved above Mazimum Continuous TOT (738' C), which will generally require being above 5,000 test, to avoid exceeding torque limits

On cold days, the longue pressure limit may be reached before the TOT limit is reached. On hot days or at high althudes, the TOT will be the limiting factor. To perform a power check, ensure the anti-lee and generator switches are OFF. Raise collective to increase power untit a stepilized TOT or torque pressure limit is reached. Record OAT, TOT, pressure althude, Torque, and (N1). Refer to Power check chert (figure 4-1).

With Deflector Battles installed, reduce resulting Power check chart forque by 3% to determine minimum tarque ovailable at a hover.

NOTE

The Power Check is acceptable when the chart percent lorgue reading is equalled or exceeded.

RATE OF CLIMB CHART

The meximum rate of climb for takeoff power and for maximum continuous power with Particle Separator installed are shown in the Parte of climb charts (figure 4-2).

HOVER CEILING CHARTS

NOTE

The Hover celling charts presented in this manual reflect performance with the 55 (neh diameter tail rotor (P/N 206-016-201) installed For performance with the 62 inch diameter tail rotor (P/N 206-010-750), refer to BHT-20683-FMS-22.

Hover calling capabilities with Particle Separator installed are shown in Nover calling charts (figure 4-3). TC APPROVED

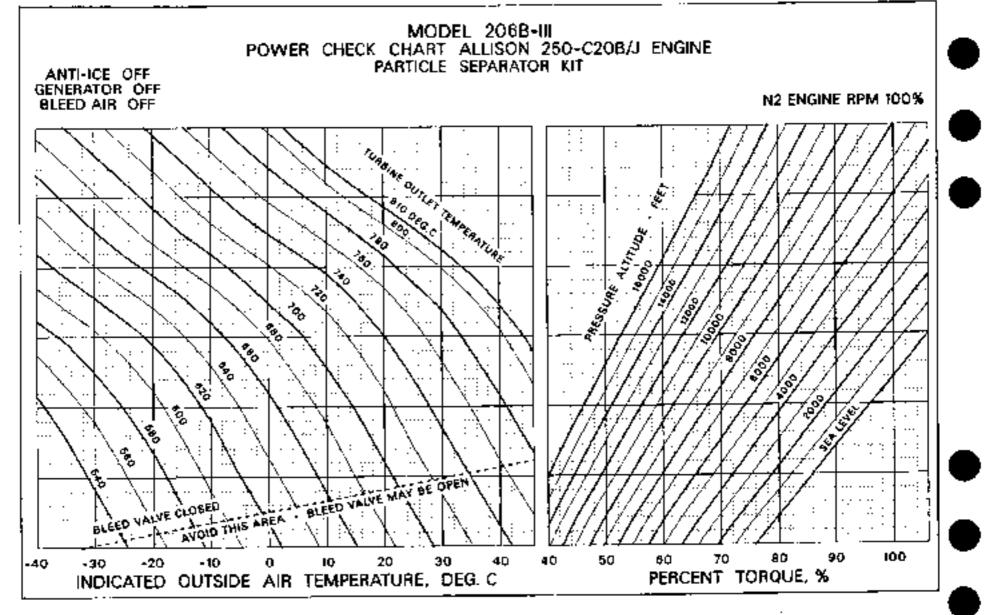
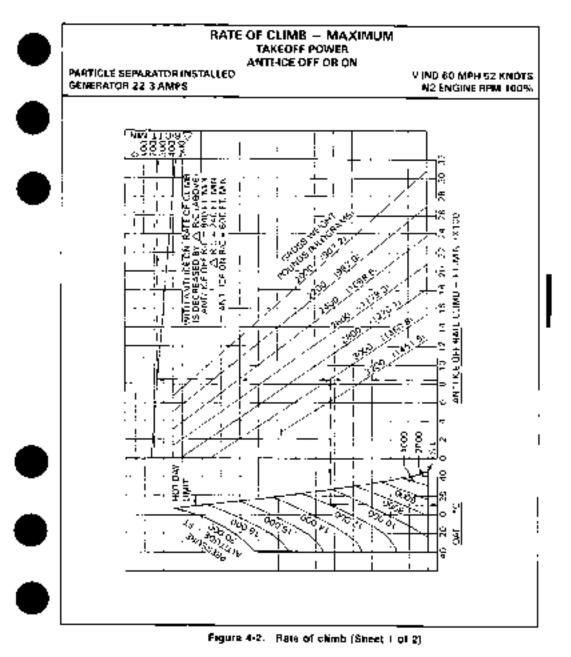
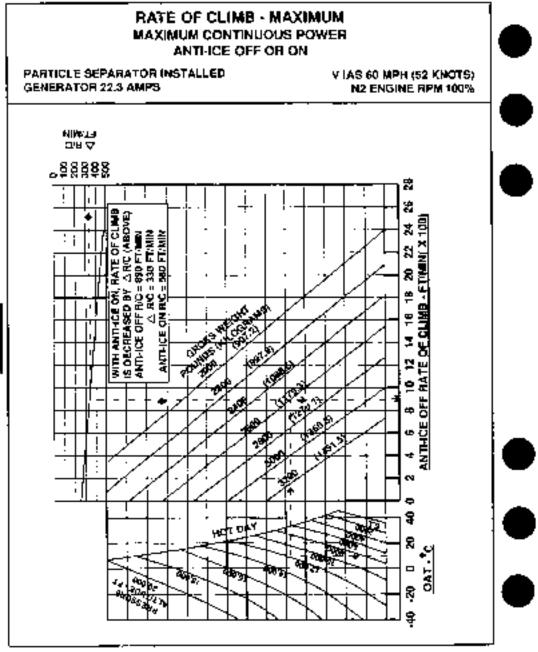


Figure 4-1. Power check chart





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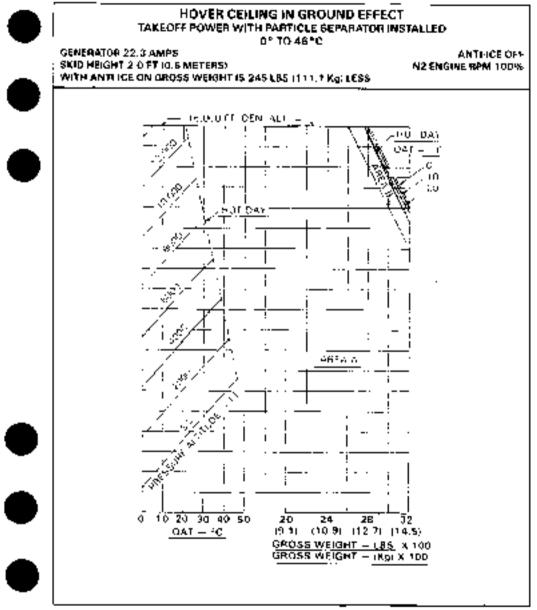
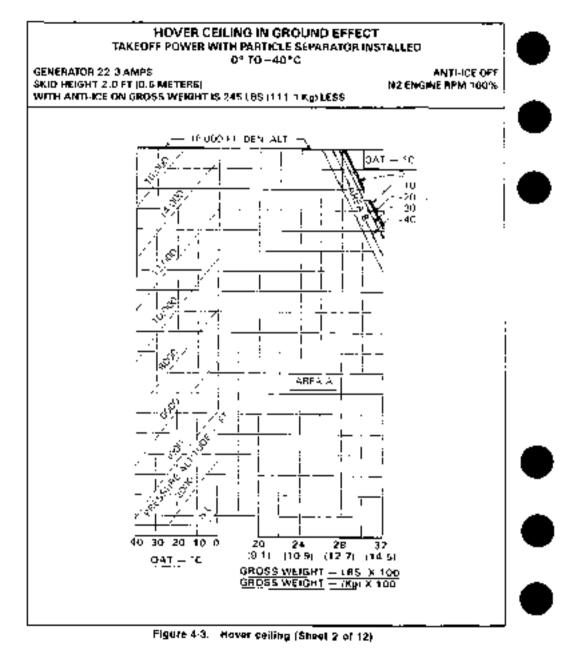


Figure 4-3. Hover ceiling (Sheat 1 of 12)



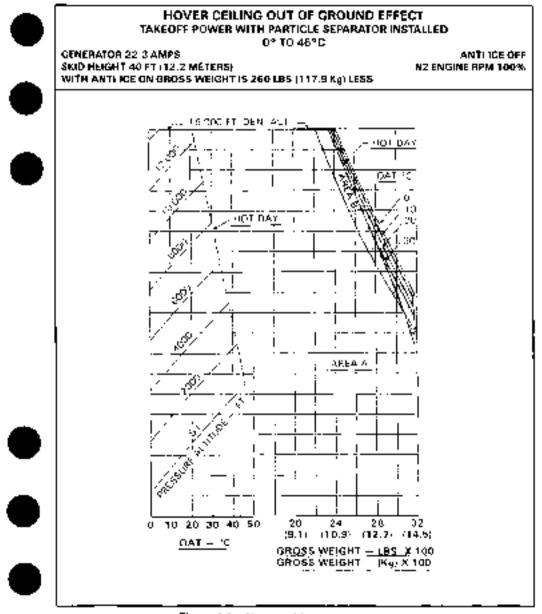
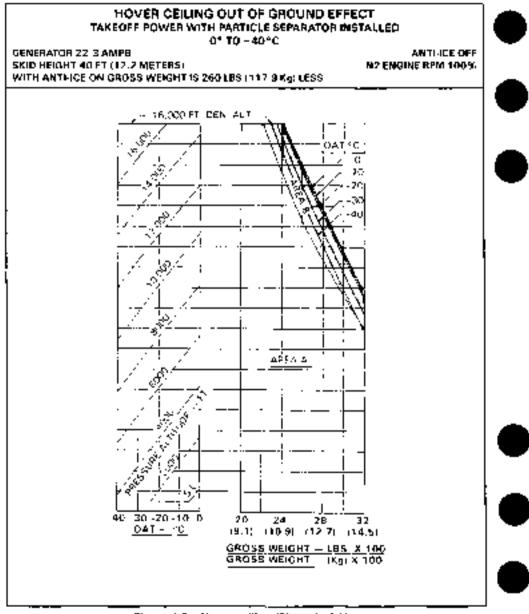
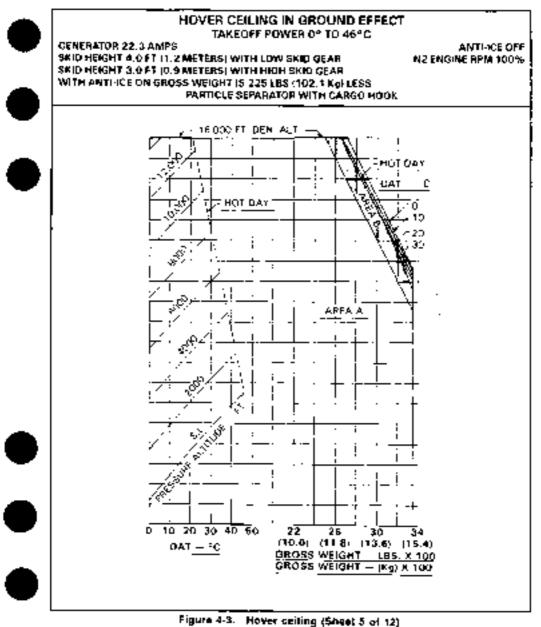


Figure 4-3. Hover seiting (Bheet 3 of 12)





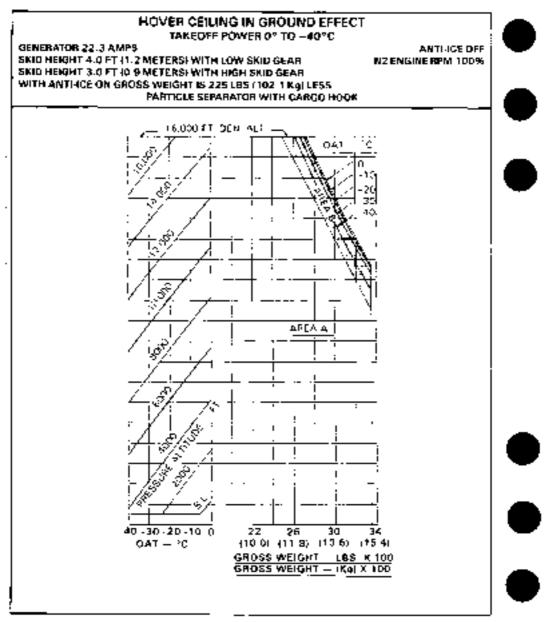
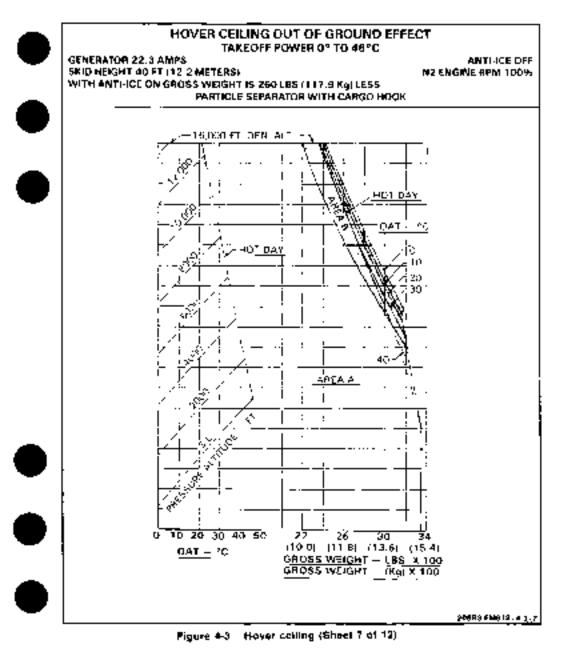
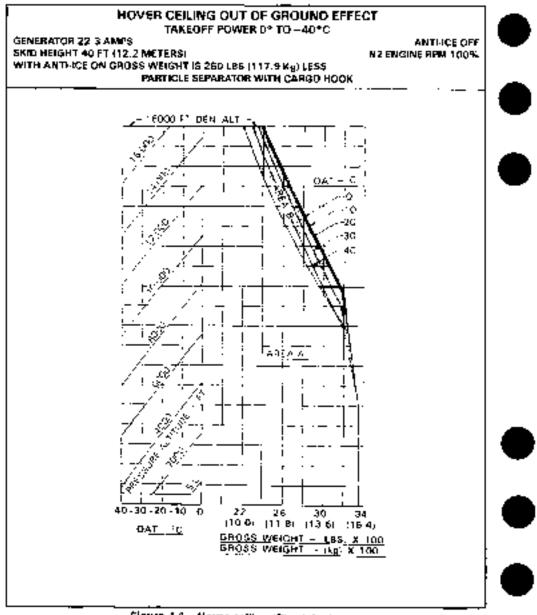


Figure 4-3. Hover calling (Sheet 6 of 12)





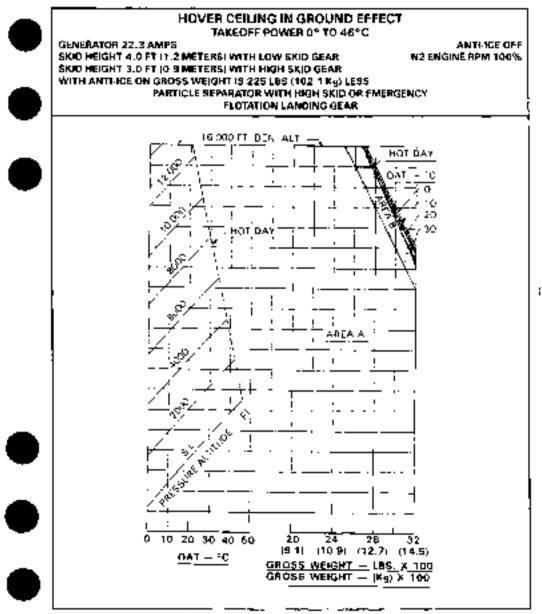


Figure 4-3. Nover ceiling (Sheet 9 of 12)

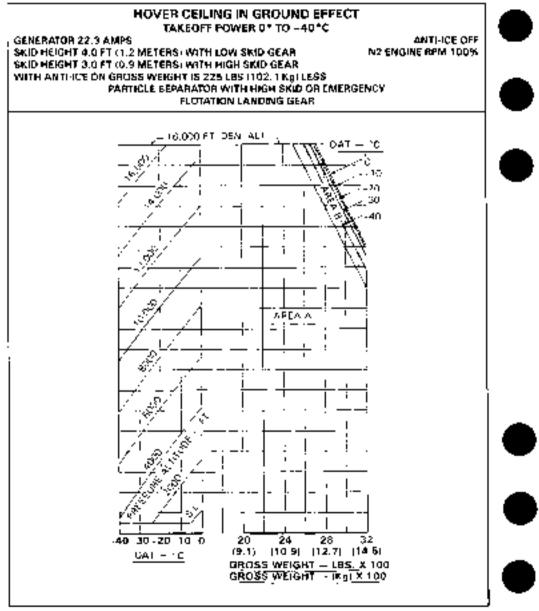
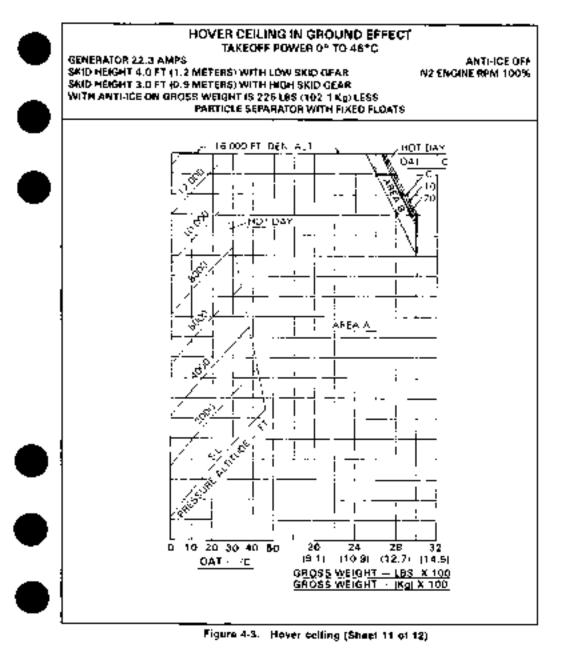


Figure 4-3. Hover ceiling (Sheet 10 of 12)



October 6, 2000

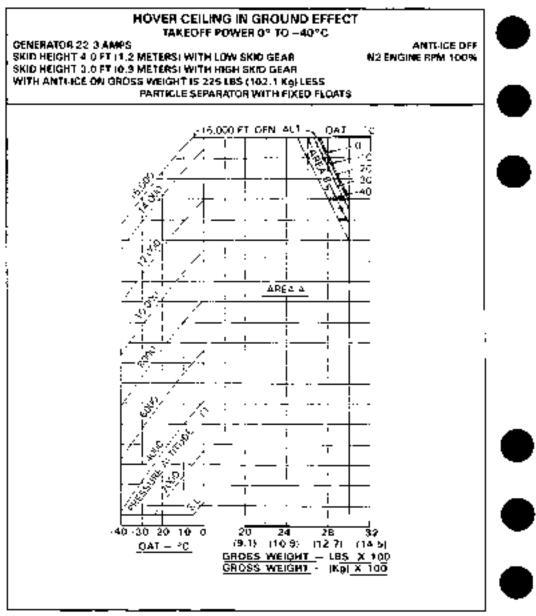


Figure 4-3. Hover celling (Sheet 12 of 12)

BHT-206B3-FMS-13



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

HI-SKID LANDING GEAR TUBULAR TYPE 206-706-031

CERTIFIED JULY 28, 1977

This supplement shall be attached to Model 20693 Flight Manual when Hi-Skid Landing Gaar Tubular Type – kit has been installed.

Information contained herein supplements information of basic Flight Manual. For Limitations. Procedures, and Performance Dets not contained in this supplement, consult basic Flight Manual.

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NOTE

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GENERAL INFORMATION

The Hi-Skid Gear (205-706-031) when installed will provide an approximate 13 additional inches (33 autiinetters) of ground clearance which will permit landings to be accomplianed in rough (armin areas. The kill consists of fore and aft cross (ubes, skid tubes, four lossings mounted cabin steps and the necessary hardware to complete the installation.



LIMITATIONS

TYPE OF OPERATION

Flight operations are prohibited with the rear passenger simps installed when the helicopter is equipped with the combination of the External Cargo Hook Kit (208-705-101) and the Hi-Skid Landing Gear.

Flight operations are prohibited with interrear passanger step installed when helicoptar is equipped with combinetion of External Holat Kit (205-705-124 or 205-705-126) and Hi-Skid Landing Gear. The four steps, installed as part of the H-Skid Landing Geer Kil, are not approved for use with any other type of tanding gear.

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined offer kil is installed and ballast readjusted, if necessary, to return empty weight CO to within allowable fimits.

Section 2

NORMAL PROCEDURES

No change from basic manual,

Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

LANDING TOUCHDOWN

Tall low run-on landings should be avoided to prevent nose-down pitching.



RUN-ON LANDINGS ON OTHER THAN A HARD FIRM SURFACE SHOULD BE EXERCISED WITH CAUTION.

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PERFORMANCE

Refer to Particle Separator Supplement (BHT-206B3-FMS-12) when the particle separator is installed.

OUT OF GAOUND EFFECT hovering performance in the same as the basic helicopter.

IN GROUND EFFECT hovering performance is shown on the following performance charts.

NOTE

The Hover Calling charts presented in this menual reflect performance with the 65 inch diameter tail rolo» (PrN 208-015-201) installed. For performance with the 62 inch diameter tail rolov (PrN 208-010-750), refer to BHT-20802-FMS-22.

HOVER CEILING

Refer to Hover Ceiling in Ground Effect charts (ligure 4-1.)

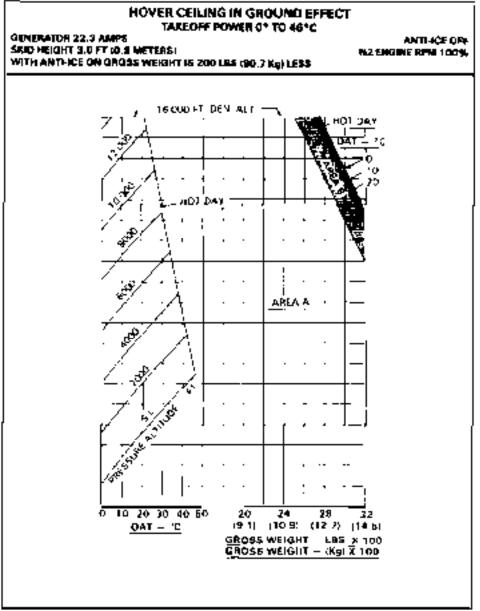


Figure 4-1. Hover celling in ground effect (Shaet 1 of 2).

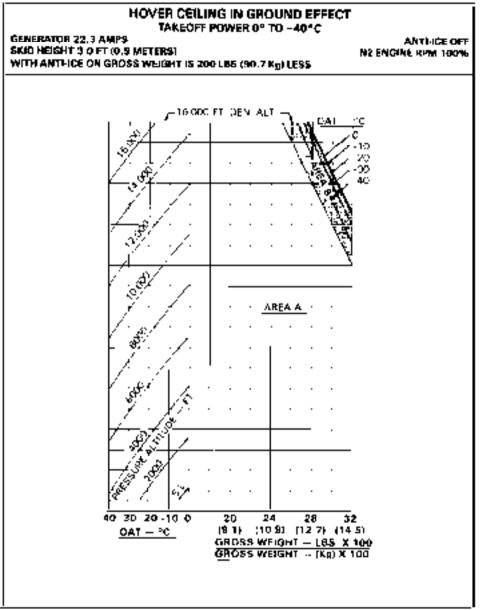


Figure 4-1. Hover ceiling in ground effect (Sheet 2 of 2)

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BHT-20683-FMS-14



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ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

EMERGENCY FLOTATION ON HIGH-SKID GEAR WITH PREFLIGHT TEST FEATURE 206-706-010

CERTIFIED JULY 28, 1977

This supplement shell be attached to Model 20883 Flight Manual when Emergency Flotation on High-Skid Gear with Preflight Test Feature, to has been installed.

information contained harein supplements information of basic Flight Manual. For Limitations, Proceduros, and Performance Data not contained in this supplement, consult basic Flight Manual.

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GENERAL INFORMATION

The Emergency Fiotation on High-Skid Geer Kit (205-705-010) consists of a high-skid lending geer, emergency floats attached to the rosin skid panets, initiation system, revigation lights, and attaching hardware. Installation of this kit permits operation over lend or water. Float initiation time is approximately 5 seconds.

NOTE

On serial numbers 4 through 153, Service Instruction 206-35 (Landing Geer Support Doublers) must be accomplished prior to installation of lot.



LIMITATIONS

TYPE OF OPERATION

Operations with the emergency floats infinited is limited to flight to a servicing facility for repacking and recharging the system.

The ficels and covere must be installed for all flight operations.

Flight operations over land or water are approved.

Accomplish, daily, PREFLIGHT FLOAT SYSTEM CHECK prior to performing over water operations,

AIRSPEED LIMITATIONS

Flozin slowed, accors installed — Seme as basic helicopter.

Maximum inflated airspeed — 100 MPH (67 knote).

> Maximum initiated sinspeed with one or both alt doors off — 60 MPH (52 knots).

> Maximum sinspeed during float initation — 70 MPH (61 knots).

---- WEIGHT LIMITATIONS

- 1

Maximum approved gross weight — 3200. pounds (1451.8 kilograms). Flight after en emergency water landing at groes weights above 3000 pounds (1360,8klingrame) is prohibited.

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is installed and ballast reedjusted, if necessary, to return empty weight CQ, within allowable limite.

PLACARDS

AIRSPEED LIMITATIONS: INFLATABLE FLOAT KIT, INFLATION ABOVE 70 M.P.H. PROHIBITED, INFLATED VNE 100 M.P.H. REQUCE VNE 5 M.P.H. PER 1000 FT ALT ABOVE 3000 FT.

(Loosted on center consols)

FLOAT

ARMING ABOVE 70 NPH

PROHIBITED

(Located on Instrument panel)

During the initialion cycle, undesirable pitching will acour at airspeed above 70. MPH (61 knote),

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Section 2

NORMAL PROCEDURES

EXTERIOR CHECK

Nonta slowed.

Nitrogen lines — Condition and accurity.

Float covers clean and secured.

Nitrogen bothe — pressure 2000 to 2000. PSL

Canon plug - Check security.

INTERIOR CHECK

PREFLIGHT FLOAT SYSTEM Check

FLOAT MANUAL ARM switch — DFF (guard closed).

FLOAT POWER circuit breaker — Check In.

FLOAT TEST and FLOAT ARM lights ---Preve-to-lest.

FLOAT TEST switch — FLOAT TEST position, and hold.

FLOAT INFLATION trigger switch — Pull On, FLOAT TEST light Huminaled, then referee.

FLOAT TEST switch Relates, FLOAT TEST light Extinguished.

FLOAT MANUAL ARM switch POWER (guard open), FLOAT ARM light Numinated, then switch OFF (guard stosed), FLOAT ARM tight Extinguished.

IN-FLIGHT OPERATIONS

OVER WATER OPERATION

FLOAT MANUAL ARM switch - POWER (guard open).

FLOAT ARM light -- Illuminated.

CAUTION

DURING FLIGHT AT ALTITUDES ABOVE 500 FEET AND AT AIRSPEED OF 70 MPN (61 KNOTS) IA9 AND ABOVE THE SYSTEM SHOULD BE DEACTIVATED BY POSITIONING THE FLOAT MANUAL ARM SWITCH TO THE OFF POSITION (GUARD CLOSED).

Rearry system prior to landing.

OVER LAND OPERATION

FLOAT MANUAL ARM switch - OFF.

DESCENT AND LANDING

WARNING

RUN-ON LANDINGS ON OTHER Than A Mard Firm Surface Should be exercised with Caution, due to the



NOTE

Tell-low run-on landings should be evolded to prevent noss-down pliching.

Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

FLOAT INFLATION PROCEDURE

Maximum inflation alrapeed — 70 MPH (61. knots),

FLOAT MANUAL ARM ewitch — POWER (guard open).

FLOAT ARM light - Muminated.

CAUTION

DO NOT INFLATE FLOATS MORE Than bood feet above Anticipated landing Surface.

FLOAT INFLATION (rigger switch — Pull On.

AFTER EMERGENCY WATER Landing

GROSS WEIGHT 3000 POUNDS (1360.8 KILOGRAMS) OR LESS

 After landing, obsets the already for possible damage.

If malfunction was cause of landing, correct mellunction.

If no damage has accounted to alreaft and mellunction has been corrected, the alreaft dan be farried to the nearest meintenance facility to repack floats and charge system. The farrying strapped is restricted to 100 MPH (87 knote) with all doors on or to 80 MPH (82 knote) with door or doors off.

GROSS WEIGHT ABOVE 3000 Pounds (1360.8 Kilograms)

After landing, sizeral must not be flawn until the sizeralt has been moved to nearest maintenance facility.

Check the sincraft for possible damage

If maifunction was cause of landing, correct matfunction.

Repeck floats and charge system.

ENGINE FAILURE OVER WATER - NIGHT

Establish an autorotative glide at 60 MPH (52 knots), for minimum rate of descent, and turn on landing light.

At 100 feet execute a moderate cyclic flare to reduce airspeed to approximately 30 MPH (26 knots).

Adjust collective and cyclic pitch sufficiently to perform a low speed

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subland touch down at a slight nase-up stitude.

NOTE

Night subcrotative louch down landings to wells' have been demonstrated at skeppeds to 36 MPH, (30 know).

Section 4

PERFORMANCE

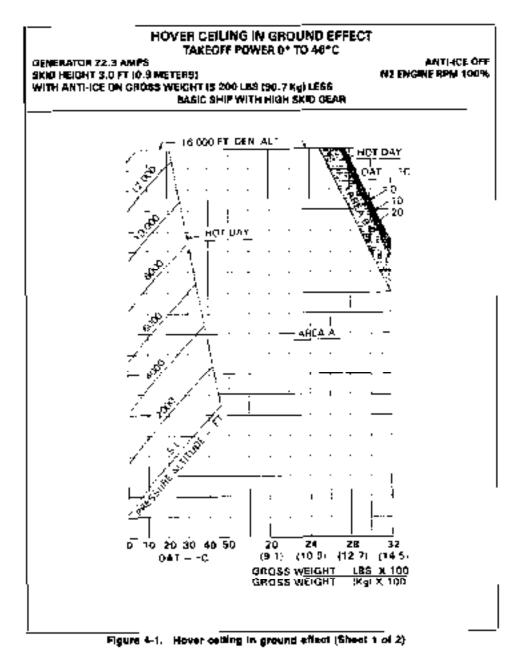
Autor to Particle Separator Supplement (BNT-20583-FM5-12) when the particle separates is installed.

HOVER CEILING

Out of ground affect hover performance is the same as basic helicopter. In ground effect hover performance is shown in figure 4-1.

NOTE

The Hover Califing cherts presented in the manual reflect gerjarmences with the 65 Inch diameter (all rator (P/N 208-018-201) taxtalled. For performance with the 52 inch diameter tail rolor (P/N 208-010-750), refer to BMT-20683-FMS-22.



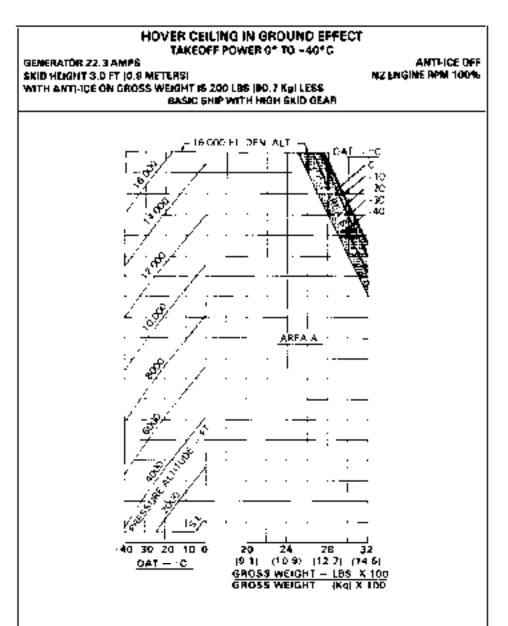


Figure 4-1. Hover calling in ground effect (Sheet 2 of 2).



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT FIXED CARGO HOOK 206-706-104

CERTIFIED JULY 28, 1977

This supplement shall be attached to Model 29683 Flight. Manual when cargo book has been installed.

Information contained havein supplements information of basic flight Mahuai. For Limitations, Procedures, and Performance Date not contained in this supplement, consult basic flight Mahuai



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REISSUE - 13 SEPTEMBER 1995

NOTICE PAGE

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ROTORCRAFT CERTIFICATION OFFICE FEDERAL AVIATION ADMINISTRATION FT. WORTH, TX 76193-0170

GENERAL INFORMATION

Cargo Hook Kit (208-708-104) consists of two A-frames, hook assembly, disclineal and manual (emergency) relarge system, and attaching herdware. A bunges shock cord is attached to cargo hook which provides outomatic stowing when hook is not in use.

NOTE

A swivel link is not supplied with Cargo Hook Kit; however, it is recommended that a link be installed between suspension cable and cargo hook.

Section 1

LIMITATIONS

TYPE OF OPERATION

Operations of the helicopter with no load on the external cargo hook is authorized under the standard airworthiness certificate without removing the unit from the helicopter.

External cargo operations shall be conducted in accordance with appropriate operating rules for external loads under VFR conditions.

WEIGHT LIMITATIONS

Maximum approved gross weight 3360 pounds (1618.5 kilegroms) including external load.

Maximum external cargo load is 1200. pounds (544.3 kilograms).

AIRSPEED LIMITATIONS

. — .

Vine B1 MPH (78 knols) for gross weights above 3000 pounds (1350.8 kKograms). CAUTION

THE AIRSPEED WITH EXTERNAL CARGO IS LIMITED BY CONTROLLABILITY, CAUTION SMOULD BE EXERCISED WHEN CARRYING EXTERNAL CARGO, AS THE HANDLING CHARACTERISTICS MAY BE AFFECTED DUE TO THE SIZE, WEIGHT, AND SHAPE OF THE CARGO LOAD.

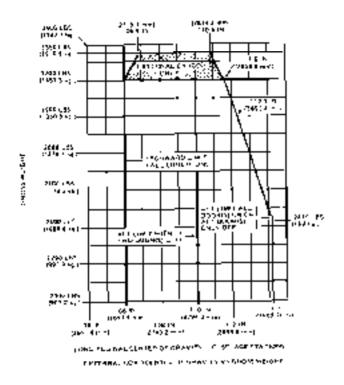
CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is installed and ballass readjusted, it necessary, to return empty weight CG within allowable limits. Refer to External Load Center of Gravity vs Gross Weight chart (liqure 1-1).

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20688-FS16-1-1



PLACARDS

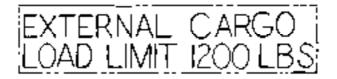
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(LOCATED ON CYCLIC STICK.)



ILDEATED ON T HANDLE OF MANUAL RELEASE CABLE.



(LOCATED ON UNDER SIDE OF HELICOPTER ON HOOK FRAME ASSEMBLY.)

2003-1915-1-2

Figure 1-2. Placards

Section 2

NORMAL PROCEDURES

GROUND CREW INSTRUCTIONS



Instruct ground erowmomber to discharge helicotper static electricity before siteching cargo by louching the sinframe with a ground wire, or if a metal aling is used, the hook-up ring can be struck, against the cargo hook. If contact has been lost after initial grounding, the helicopter should be electrically regrounded and, if passible, contact maintained until hook-up is completed.

Instruct ground personnel to check primary load ring and secondary load sing for condition and proper size (Table 2-1). Check for proper rigging USE OF INAPPROPRIATELY SIZED LOAD RINGS MAY RESULT IN LOAD HANG-UP WHEN LOAD RING IS TOO SMALL OR WADVERTENT LOAD RELEASE IF LOAD RING IS TOO LARGE.

Check that only one primary ring is captured in the load beam and only one secondary ring with correct cross-section dimension is captured in the primary ring. Additional rings, stings, or shackles shall be attached to the secondary load ring. See figure 2-1.

INSIDE CIAMETER	CROSS SECTION	SECTION OF SECONDARY RING	
2.38 to 2.50 in.	1.0 in.	0.438 in.	
(60 452 to 63.50 mm.)	(25.4 mm.)	(11.12 mm.)	
2.50 to 2.75 in.	10 kg.	0.625 in,	
(63.50 to 69.85 mm)	(26.4 mm.)	(15.88 mm.)	

Table 2-1. RING SIZE - CARGO HODK PIN 14027-2

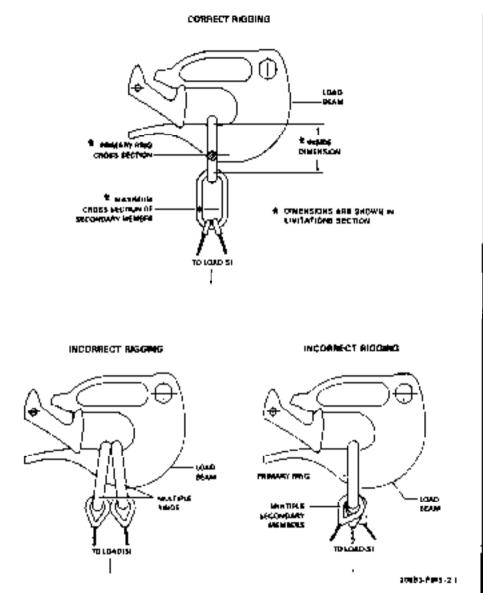


Figure 2-1. External load regging

EXTERIOR CHECK

Cargo auspension assembly -- Condition and security

Cargo sling — Condition, proper length.

ENGINE PRESTART CHECK

CARDO HOOK circuit breaker - In.

BAT syntch — On.

Cyolic CARGO RELEASE switch — Press and hold; pull down on cargo hook; book should open. Release switch and hook should close and lock.

BEFORE TAKEOFF

Cargo — Secured; aling attached to cargo.

Ground crewmember — Positioned as required

TAKEOFF



AVOID CRITICAL RELATIVE WINDS WHILE PERFORMING EXTERNAL CARGO OPERATIONS. REFER TO BHT-20683-FN-1.

Mover helicopter at sufficient height to allow crewmamber to discharge statis electricity and to altach cargo alloy to cargo hook.

Ascend vertically directly over cargo, then slowly lift cargo from surface. Padais — Chock for adequate directional control.

Nover power — Check targue required to hover with external load.

Teksolf into the wind it possible, allowing advocuble sling load clearance over obstacles.

IN-FLIGHT OPERATION

NOTE

Control movements should be made empolity and kept to a minimum to prevent oscillation of sling load.

Airspeed — Within limits for adequate controllability of rotorcraft-load combination.

Flight path — As required to evold flight with external load over any person, vehicle or structure.

DESCENT AND LANDING

Flight path and approach angle — As required for wind direction and obstacle charance.

Terminole approach to a high hover. When stabilized at a hover, descend slowly until cargo contacts surface. Maintain tension on sling.

Cyclic CARGO RELEASE switch - Press to release sling from book.

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EMERGENCY AND MALFUNCTION PROCEDURES

CARGO FAILS TO RELEASE ELECTRICALLY

in the syant that the cargo book will not roloune the sling when the cyclic CARGO RELEASE switch is engaged, proceed en follows: Meintein tension op sling.

Puil EMER CARGO RELEASE PULL mechanical rolease hondle to drop cargo.



PERFORMANCE

Refer to Particle Separator Supplement (BHT-20683-FMS-12) when the particle separator is installed.

HOVER CEILING CHARTS

For external cargo operations, refer to the Hover Colling in Ground Effect (figure 4-1) and Hover Colling Out al Ground Effect (figure 4-2), Refer to 6HT-206B3-FM-1 for use of these charts.

NOTE

The Hover Celling charts presented in this manual reflect performance with the 65 inch drameter tail rotor (P/N 206-016-201) installed. For performance with the 62 inch drameter tail rotor (P/N 206-010-750), refer to BMT-20683-FMS-22.

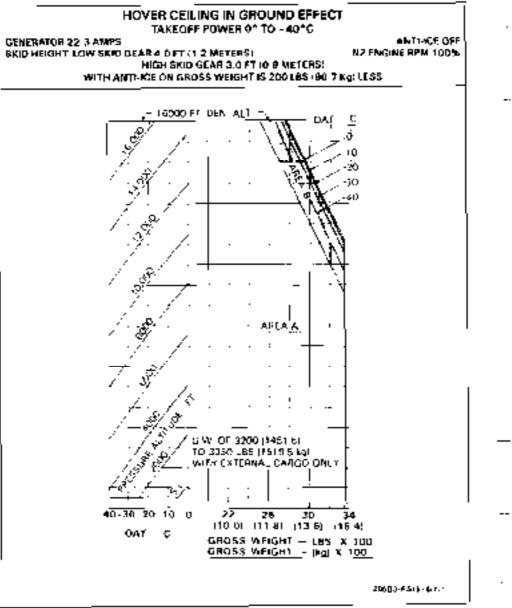


Figure 4-1. Nover celling in ground effect (Sheet 1 of 2)

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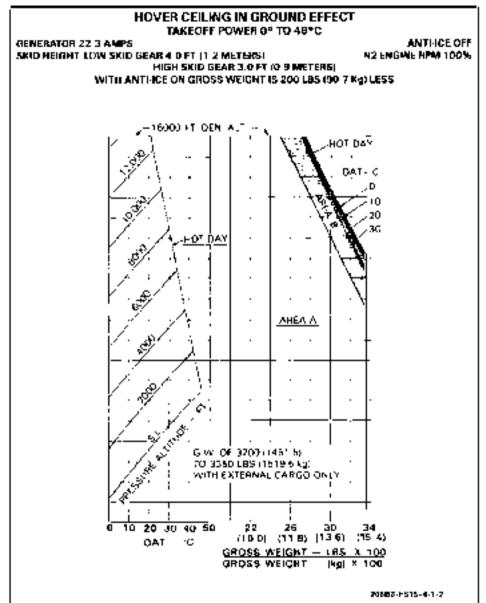


Figure 4-1. Hover calling in ground effect (Sheet 2 of 2).

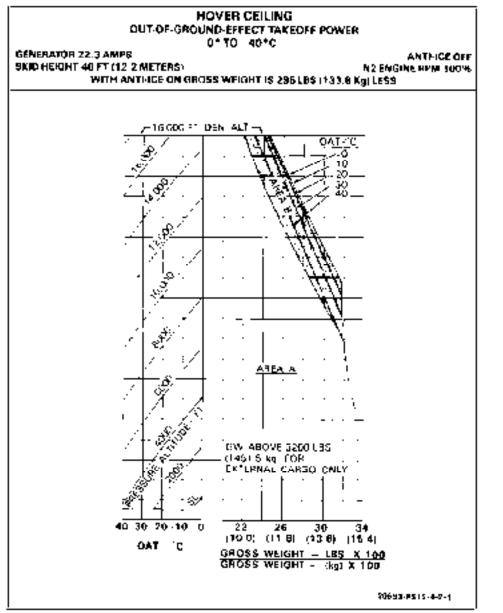


Figure 4-2 Hover ceiling out of ground effect (Sheet 1 of 2)



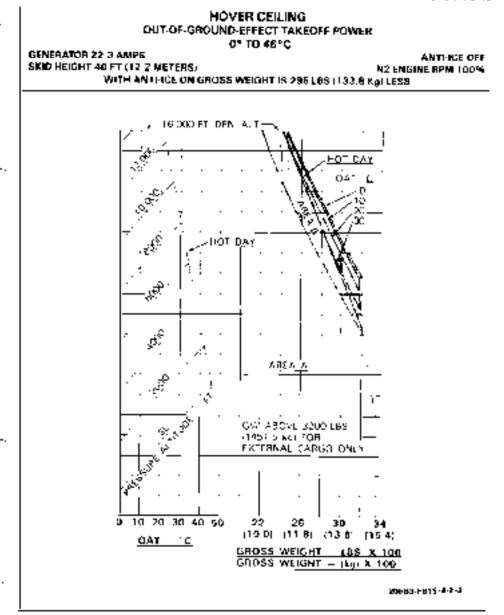


Figure 4-2. Hover ceiling out of ground effect (Siveet 2 of 2).

BHT-206B3-FMS-16



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

ENVIRONMENTAL CONTROL SYSTEM (CABIN TEMP CONTROL) 206-706-344 OR 208-706-402

CERTIFIED JULY 28, 1977

This supplement shall be attached to Nodel 20883 Filight Manual when Environmental Control System (Cabin Temp Control) kil has been installed.

information contained herein supplements information of basic Firight Menual. For Limitations, Procedures, and Parformance Onto not contained in this supplement, consult basic Flight Manual.

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HANAGER

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GENERAL INFORMATION

The Bell Environmental Control System (ECS) (208-706-344 or 206-706-402) will lower or relies the cabin temperature and thereby provide additional comfort to the cabin occupants. The ECS until the powered by engine bleed air and is manually temperature controlled for the ECS autput involue desired. The 206-706-402 Environmental Control System is installed in helicopter serial number 3567 and subsequent due to new changes in interior design. The ducting and air cutlets are the primary differences in the 206-706-402 Environmental Control System.



LIMITATIONS

TYPE OF LIMITATIONS

Flight with the Environmental Control System (ECS) operating is prohibited during lateoff, hover and landing.

External pargo loading limited to 3200 pounds (1451.5 kilograms) gross weight with ECS unit in operation.

CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after Environmental Control System is installed and the ballast readjusted, if necessary, to return empty weight CG. within allowable fimits.

PLACARDS

ECS OFF FOR TAKEOFF LANDING HOVER

(Located on left side of instrument panel)

WHEN ENVIR CONT SYSTEM IS INSTALLED REDUCE ALLOWABLE WT BY 75 POUNDS (34 KULOGRAMS) (Lagaled on inner mutate of beginge compartment door.)



NORMAL PROCEDURES

ENGINE PRE-START CHECK

ECB (Environmental Control System) which — OFF.

BEFORE TAKEOFF

EC6 circuit breaker — Check In.

EGS swhch - OFF.



FLIGHT WITH THE Environmental Control System (ECS) Operating is

1

PROMIBITED DURING TAKEOFF, NOVER, AND LANDING.

IN-FLIGHT OPERATIONS

CAUTION

SELECTION OF MAX HEAT POSITION ON ECS SWITCH TURNS OFF UNIT COOLING FAM, DO NOT USE MAX HEAT POSITION AT AMBIENT TEMPERATURES AT OR ABOVE -12°C TO PREVENT DAMAGE TO ECS.

ECS switch — COOL/HEAT (as desired) for all maximum allowable gross weights after transistional fill has been attained in forward flight. For operations below -12°C switch may be placed in MAX HEAT.

TEMPERATURE CONTROL — ROTATÉ lo obtain destred comfort (evel li Environmental Control System is being openated.

DESCENT AND LANDING

ECB switch — OFF.

Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

OPERATING EMERGENCIES

ECS ewitch — OFF if any of the following emergencies occur; Funi control and/or governor failure. Engine fuel system failure. Helicopter fuel system failure. Engine air start is to be accompilated.

Section 4

PERFORMANCE

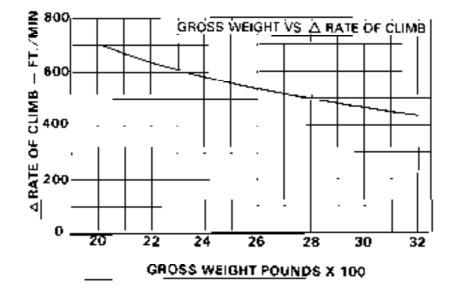
No change in performance with ECS OFF.

Refer to Rate of Climb (ligure 4-1).

RATE OF CLIMB

TAKEOFF POWER & MAX. CONT POWER ALL TEMPERATURES AND CONFIGURATIONS 100% RPM

ESC R/C = FM OR SUPPLEMENT R/C + \triangle R/C



EXAMPLE 🛆 RIC CHART

Determine rate of climb for dealered stringer, temperature and proce weight from Feght. Menual or appropriate Statydoment Chieft.

Subtract 🛆 R-C decrement from Flight Manual or Supplement R/C Chart to obtain R/C with ECS operating.

Figure 4-1. Rate of climb

3/4

BHT-206B3-FMS-17



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT EXTERNAL CARGO HOOK 206-706-101

CERTIFIED JULY 28, 1977

This supplement shell be attached to Moder 20683 Flight. Nenusi when cargo hook has been installed.

Information contained herein supplements information of basic flight Manuel. For Limitations. Procedures, and Performance Data not contained in this supplement, consult basic Flight Manual.

ОСРАНСКИ КОЛСЕ ССРОВЪНТ НИК ЗДО, ⁴¹ ОГ, СОРТЕК ИМА ИТО ВЕЦ ИЗ, ОСРАТЕК ТЕКОТОК ИС И ВИКОМ ОГ РЕСПОНТАНИТИ ИСС И, РУМИТ КЕСЕМАЦ



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MANAGER

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GENERAL INFORMATION

The Bell Cargo Hook Kit (206-708-107) consists of two A-traine mountings, a main cross beam, and an integral cargo book, designed to carry loads of 1200 pounds (544.3 kilograms). The cargo is suspended from the helicopter center of gravity and the design is such that oscillatory moments of a free swinging cargo do not impart motion to the airframe. The system contains an electrical and manual emergency release. Provisions for slowing the kil when flight without cargo is anticipated are gravided.

NOTE

Two bumper assemblies (205-070-585-1) must be installed per Be)| Service Letter No. 2064-74 when external cargo book is used with livet equipped helicopters.

A swivel link is not supplied with the Cargo Nook Kit; however, it is recommended that a link be installed between supprision cable and corgo hook.



LIMITATIONS

TYPE OF OPERATION

Operation of the helicopter with no load on the external cargo hook is authorized under the standard airworthingse certificate without removing the unit from the helicopter.

External cargo operations shall be conducted in accordance with appropriete operating rules for external loads under VFR conditions.

Refer to Persicle Separator Supplement (BHT-20683-FMS-12) when the Particle Separator is installed.

WEIGHT LIMITATIONS

. . .

Meximum approved groas weight 3350 pounds.

AIRSPEED LIMITATIONS

Yne 91 MPH (78 knots) for gross weights, above 3000 pounds.

Extreme caution should be exercised when cerrying cargo loads as controllability may be affected, due to the size and shape of the cargo load.

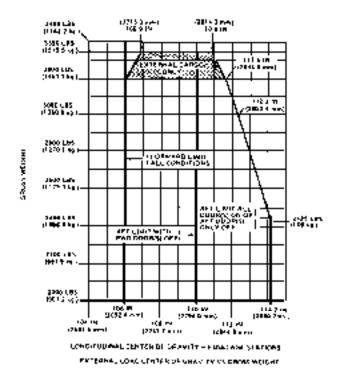
CENTER OF GRAVITY LIMITS

Actual weight change shall be determined after kit is installed and ballast readjusted, if necessary, to return empty weight CO within silowable fimits. Refer to External Load Center of Grevity vs Gross Weight chart (ligure 1-1)

FAA APPROVED

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(LODATED ON CYCLIC STICK.)



(LOCATED ON T HANDLE OF MANUAL RELEASE CABLE.)



(LOCATED ON UNDER SIDE OF MELICOPTER ON HOOK FRAME ASSEMBLY)

2010/2-5417-1-2

Figure 1-2. Plecards and markings

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NORMAL PROCEDURES

GROUND CREW INSTRUCTIONS

WARNING

instruct ground crewmember to discharge helicopter static electricity before attaching cargo by touching the airtrame with a ground whe, or if a metal sling is used. The hook-up ring can be alruck against the cargo hook. If contact has been lost after institut grounding, the helicopter should be electricatly regrounded and, if possible, contact meintained with hook-up is completed.

Instruct ground personnel to check primary load ring and secondary load ring for condition and proper size (Table 2-1) Check for proper ngging. USE OF INAPPROPRIATELY SIZED LOAD RINGS MAY RESULT IN LOAD HANG-UP WHEN LOAD RING IS TOO SMALL OR INADVERTENT LOAD RELEASE IF LOAD RING IS TOD LARGE.

Check that only one primary ring is captured in the toad beam and only one encondary ring with correct cross-section dimension is captured in the primary ring. Additional rings, slings, or shackles shalf be attached to the secondary load ring. See figure 2-1.

PRIMARY RING Inside Diameter	PRIMARY RING CROSS SECTION	MAXIMUM CROSS SECTION OF SECONDARY RING	
2.38 to 2.50 in.	0.625 in.	0.438 in.	
(60.452 to 63.50 mm.)	(15.88 mm.)	(11.12 mm.)	
2.50 to 2.75 in.	0.625 in.	0.625 in.	
(63.50 to 69.85 mm.)	(15.88 mm.)	(15.8B mm.)	

Table 2-1. RING SIZE - CARGO HOOK P/N 14027-2

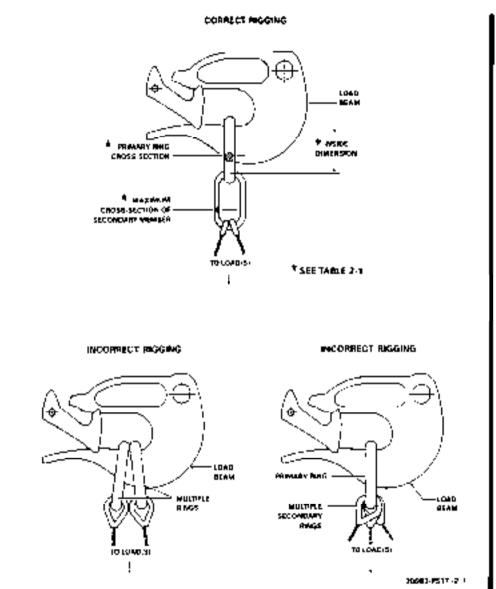


Figure 2-1. External load rigging

EXTERIOR CHECK

Cargo suspension satembly — Condition and security

Cargo sting — Condition, proper length.

ENGINE PRESTART CHECK

CARGO HOOK eitewit breeker - In.

BAT switch — Do.

Cyclic CAAGO RELEASE ewitch — Prese and hold; pull down on cargo hook; hook should open. Helease switch and hook should close and lock.

BEFORE TAKEOFF

Cargo - Secured: sling sitashed to cargo.

Ground crowmember — Positioned as required.

TAKEOFF

WARNING

AVOID CRITICAL AELATIVE WINDS WHILE PERFORMING EXTERNAL CARGO OPERATIONS. REFER TO BHT-20583-FM-1.

Hover helicopter at sufficient height to allow crewmember to discharge static electricity and to allach cargo aling to cargo hook.

Ascend vertically directly over cargo, then slowly lift cargo from surface. Pedels — Check for adequate directional control.

Nover power — Check torque required to hover with external load.

Takeoff into the wind it possible, allowing adequate alling load clearance over obstacles.

IN-FLIGHT OPERATION

NOTE

Control movements should be made empothly and kept to a minimum to prevent oscillation of sling load.

Alzapaed — Within limits for adequate controllability of referentitional combination.

Flight path — As required to avoid flight with external load over any person, Vehicle or structure

DESCENT AND LANDING

Flight path and approach angle — As required for wind direction and obstacle alcorator.

Terminate approach to a high höver. When stabilized at a hover, descend slowly until cargo compete surface. Maintain tension on sling.

Cyclic CAAGO RELEASE switch — Press to release sling from book.

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EMERGENCY AND MALFUNCTION PROCEDURES

CARGO FAILS TO RELEASE ELECTRICALLY

In the event that the cargo hook will not release the aling when the cyclic CARGO RELEASE switch is engaged, proceed as follows: Melmain tension on sling.

Puil EMER CARGO RELEASE PULL mechanical release handle to drop cargo.

Section 4

PERFORMANCE

Rater to Perficie Separator Supplement (SHT-20583-FMS-12) when the particle separator is installed.

HOVER CEILING CHARTS

For external cargo hook oparations, refer to Mover Calling in Ground Etheol (ligure 4-1) and Nover Calling Out of Ground Etheot (figure 4-2) for hover performance. Refer to BHT-20693-FM-1 for use of these charts.

NOTE

The Hover Ceriling charts presented in this manual reflect performance with the 65 Inch diameter tell refor (P/N 206-016-201) installed. For performance with the 52 inch diameter tell refor (P/N 206-010-750), refer to BHT-20683-FMS-22

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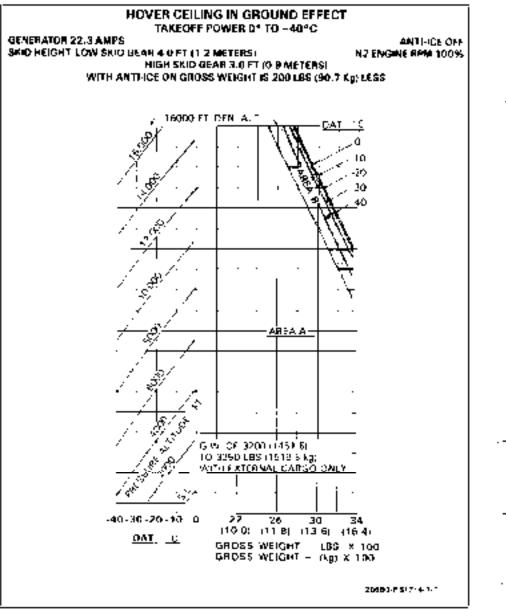


Figure 4-1. Hover ceiling in ground effect (Sheet 1 of 2)

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BHT-20683-FMS-17

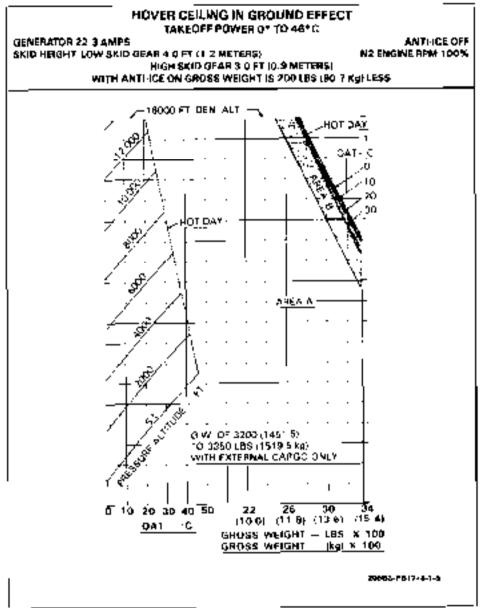


Figure 4-1. Hover celling in ground effect (Sheel 2 of 2)

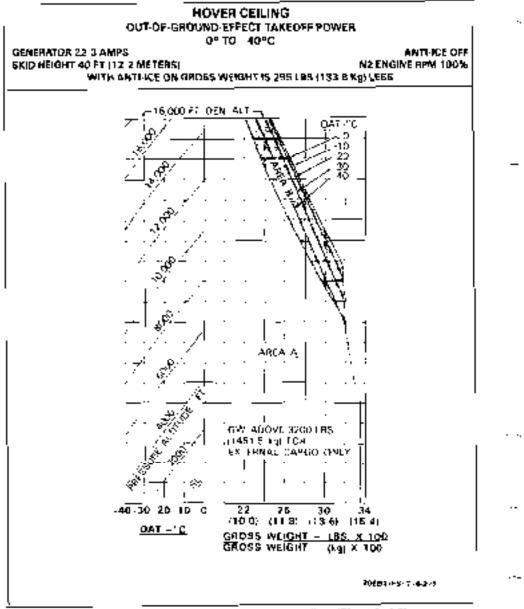


Figure 4-2. Hover celling out of ground effect (Sheet 1 of 2)

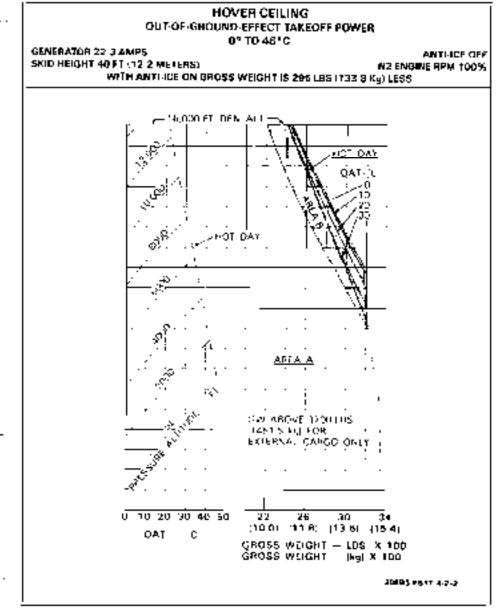


Figure 4-2. Hover celling out of ground effect (Sheet 2 of 2)



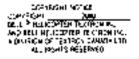
ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT ENGINE (AUTOMATIC) RE-IGNITION 206-706-038

CERTIFIED AUGUST 11, 1977

This supplement shall be attached to Model 20683 flight Manual when Engline (Automatic) Re-Ignition All has been installed.

Intermation contained herein supplements intermation of basic Flight Manual. For Limitations, Procedures, and Performance Data not contained in this supplement, or other applicable supplements, consult basic Flight Manual



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October 8, 2000 CID

GENERAL INFORMATION

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The Engine Relight Kit (206-706-038) will provide engine automatic re-ignition capability in the event of an engine flameout. Re-ignition of lengine is actuated, when system is armed, by decay of angine blead air as a result of flameout. TC APPROVED



LIMITATIONS

TYPE OF OPERATIONS

The Patt-cle Separator Engine Air Induction System (BHT-20683-FMS-12) and Engine Air Induction System Dellector Kit (BHT-20683-FMS-10) shall be installed in conjunction with Engine (Automatic) Relightion System when conducting operations in falling and/or blowing anow.

WEIGHT LIMITATIONS

Actual weight change shell be determined offer kit is installed and ballast readjusted. of necessary, to return empty weight CG within allowable limits.

ALTITUDE LIMITATIONS

Do not activate automatic re-ignition system of affitude above 12,000 feet hp.

Engine (Automatic) Re-Ignilion System shell be ARMEO when conducting operations in failing and/or blowing snow below 12,000 test Hp.



NORMAL PROCEDURES



ENGINE PRE-START CHECK

After Rotor Low RPM System Check add-

- ENGINE RELIGHT switch TEST.
- Move ENGINE AELIGHT switch to TEST position, holding momentarily in ENGINE AELIGHT ARM position (center).
- Hold in TEST position and check for ENGINE RELIGHT indicator illumination and listen for ignition system on, approximately two seconds.

- Move switch to OFF/RESET position.
- ENGINE RELIGHT Indicator Exlinguished.

NOTE

The engine relight switch has three positions as follows:

- TEST Up position momentarily.
- ENGINE RELIGHT Ann Center position.
- 5. OFF/RESET Lower position.

OFFMESET

BEFORE TAKEOFF

After power turbine N2 — Set for 100% in Nat pitch add:

- 1. ENGINE RELIGHT switch Arm
- Move switch to ENGINE RELIGHT Arm center position.
- The system will provide subomatic re-ignition as long ea synich is in this position.

ENGINE SHUTDOWN

After Throttle — Flight Idle — etc. odd:

- ENGINE RELIGHT switch Check Arm position. Press IDLE REL button and roll throttle to full closed position.
- ENGINE RELIGHT indicator hight

 Illuminated Indicates the Engine (Automatic) Relignation system is functional.
- ENGINE RELIGHT switch -- OFF.

Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

ENGINE AUTOMATIC - RE-IGNITION

To extinguish the light move switch down to OFF/RESET position, then up to ENGINE RELIGHT Arm position (center)

If automatic re-ignition occurs the ENGINE RELIGHT indicator light will illuminate.

The system is still armed for a new reightion when light is illuminated.

Section 4

PERFORMANCE

No change from basic manual.

BHT-206B3-FMS-19



ROTORCRAFT FLIGHT MANUAL

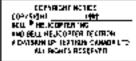
SUPPLEMENT

AUXILIARY BATTERY 13 AMP HOUR 206-706-330

CERTIFIED SEPTEMBER 16, 1977

This supplement shall be attached to Model 20683 Flight Manual when Auxiliary Battery 13 Amp Hour kit has been Installed.

Internation contained herein supplements intermation of basic Flight Manual. For Limitations, Procedures, and Performance Data not comeined in this supplement, consult basic Flight Manual





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REISSUED 13 FEBRUARY 1992

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GENERAL INFORMATION

The Auxiliary Balliery Kit (205-706-330) consists of a 13 amp hour battery, battery disconnect, channel, bushing, stiffener, cables, lubes, brackets, and staching hardware.

FAA APPROVED



LIMITATIONS



CENTER OF GRAVITY LIMITS

Actual weight change shall be determined offer kit is installed and ballast readjusted. if necessory, to return empty weight CO, within allowable limits.

LOADING LIMITATIONS

Maximum baggege loading is 220 pounds (99.6 kilograms) when AuxiMery Battery KM is installed.

PLACARDS

REDUCE ALLOWABLE WEIGHT IN BAGGAGE COMPARTMENT BY 30 LBS WHEN AUXILIARY BATTERY IS INSTALLED

(Localed on the inboard side of the baggage compariment door.)

Section 2

NORMAL PROCEDURES

EXTERIOR CHECK



FUSELAGE - AFT LEFT SIDE

Baggage compariment — Cargo lind down; auxiliary battery acoure; door secure.



ENGINE PRESTART CHECK

After LDQ LTS switch - OFF, edd:

Bartery select switch - BOTH.

ENGINE STARTING

Atter GEN switch - On, add:



IF LOADMETER IS NOT WITHIN THE NORMAL OPERATING Range (Below 70%) within TWO (2) MINUTES AFTER START, PROCEED AS FOLLOWS:

Battery solect switch FWO BAT.

Leadmater — Below 70%, continue flight on FWD battery.

If not below 70% on loadmeter, then

Bettery select ewitch — AFT BAT.

Loadmeter — below 70%, continue flight on AFT bettery.

M not below 70% on londmeter, abort mission and investigate cause.

Loedmoler — Balow 70%, after two minutes.



EMERGENCY AND MALFUNCTION PROCEDURES

LIGHT

FAULT AND REMEDY

AUX BATTERY Battery case temperature HOT or has reached 140°F BATTERY HOT (60.0°C) or higher, isolate

has reached 140°F (50.0°C) or higher, isolate matfunctioning bettery with Battery saled ewitch. Lend as soon as precised. After landing, do not use allected battery for angine restart, as this will cause additional battery heating. Service or replace bettery and check battery relay prior to retiee. LIGHT

FAULT AND REMEDY Battery case tomperature

AUX BATTERY Battery case tomperature TEMP or hee reached 130°F BATTERY TEMP (64.4°C) or higher, include melfunctioning battery with Battery solution battery prior to replace battery prior to re-use.

NÔTE

Frequent and repetitive B ATTERY TEMP indications may be indicative of a marginal battery condition. It is recommended that if this occurs the battery should be removed and inspected in accordance with manufacturer's recommendation at the first conventent opportunity.

Section 4

PERFORMANCE

No change from basic manual.



MANUFACTURER'S DATA

WEIGHT AND BALANCE

BAGGAGE COMPARTMENT

(13,6 kilograma) when the Auadiary Battery Kit is installed.

Reduce the maximum allowable weight in the baggage compartment by 30 pounds



20

BHT-206B3-FMS-20



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

BLEED AIR HEATER 206-706-149 OR 206-706-700

CERTIFIED OCTOBER 26, 1979

This supplement abolt to attached to Model 20683 Flight Manual whee Bleed Air Heater til has been installed.

Information contained herein supplements information of basic Flight Manual. For Limitations, Procedures, and Performance Data not contained in this supplement, consult basic Flight Manual.

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 ROTORCRAFT CERTIFICATION OFFICE FEDERAL AVIATION ADMINISTRATION FT. WORTH, TX 76183-0170

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GENERAL INFORMATION

The Bleed Air Heeter (206-706-149 or 206-706-700) is made up of the bleed air system and beater ventitation air system. The bleed air flows from the engine through bleed lines to the mixing valve and into the cabin in the form of heated ventiliation air. The 206-706-700 Bleed Air Heater is installed in helicopter series number 3567 and subsequent due to new changes in interior design. The ducting and air outlets are the primary differences in the 208-706-700 Bleed Air Heater.



LIMITATIONS

WEIGHT/CG LIMITATIONS

Weight change shall be calculated after kit is installed and beliast readjusted, if

necessary, to return empty weight CG within allowable limits.

Section 2

NORMAL PROCEDURES

ENGINE PRESTART CHECK

NOTE

HEAT/VENT switch is a (woposition switch (HEAT and OFF) Vent position is not operable.

HEAT wellch - OFF.

HEAT switch As desired.

TEMP CONT knob — Rotate to obtain desired temperature.

DEFOG levers (overhead) Adjust as required for windshield detogging. (For 205-706-149 only.)

Air outline — Adjust for optimum comfort.

BEFORE TAKEOFF

HEAT switch - As desired.

INFLIGHT OPERATIONS

NOTE

TOT increases with Blood Air Heater operating, Observe Turbine Outlet Temperature Limitations.

- - -

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Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

HEAT swhich — OFF if any of the following occurs: Engine Overlemperature

Fuel Control and/or Governor Failure.

Engine laiture (Il Engine Air Blart is to be attampted).

insufficient Power,

Section 4

PERFORMANCE

Reduce the performance data in basic flight manual or optional equipment supplement in secondance with the totowing charts when the bleed air heater is operating. Performance decrements are shown for the standard engine air inlet and for the particle separator induction system.

Complete hover performance is presented herein for the show deflector, which includes losses due to the perficie separator.

NOTE

The Hover Celling charts presented in this manual reliect performance with the 65 inch diameter tail rotor (P/N 206-016-201) installed. For performance with the 62 inch diameter tail rotor (P/N 208-010-750), relat to BHT-20683-FMS-22.

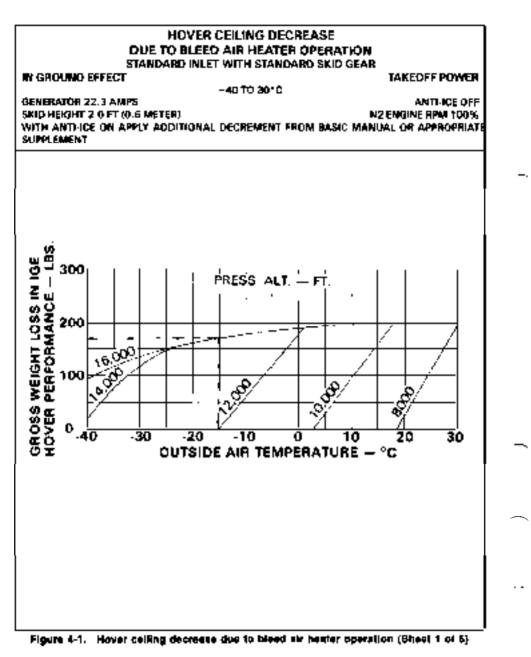
EXAMPLE

What gross weight loss in hover performance could be expected under the following conditions:

Standard engine injet	Ştendard skid gear
IGE hover	Takeoff power
Ovjejde alt temp. = -16°C	AMHICE Off
Pressure attitude =	

14,000 feet

Using the appropriate KE chart, enter at OAT (-15°C), move vertically to intersect pressure altitude curve (or outermost curve, whichever comes tirst), than proceed horizonially to obtain the gross weight toss (170 pounds). Apply this weight toss to the weight obtained from appropriate hover performance abart in basic legit manual or supplement. There is no loss in haver performance when the outside eig temperature is to the left of the pressure altitude curve, it can be seen on the chart covering the above conditions that at -15°C there is no ican in IGE hover performance from can level to 12,000 feet.



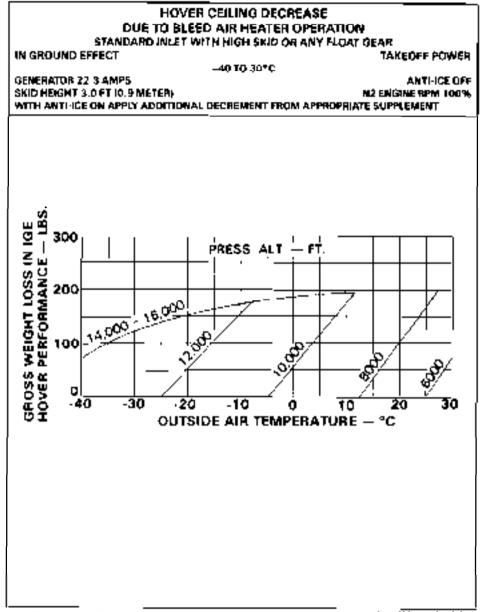


Figure 4-1. Hower celling decrease due to bleed air bealer operation (Sheet 2 of 6)

1.4%

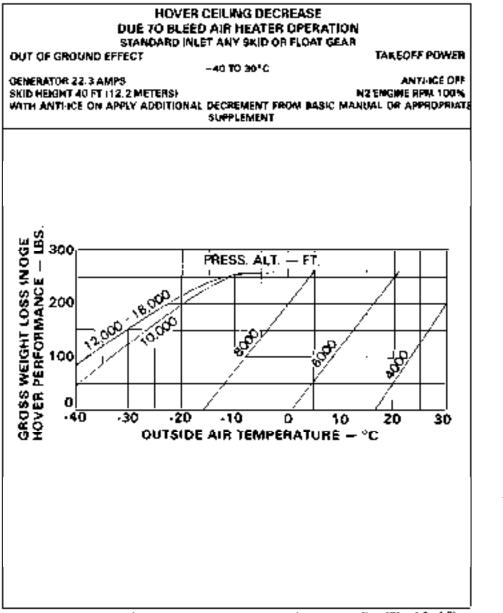


Figure 4-1. Nover celling decrease due to bleed air heater operation [Sheet 3 of 8]

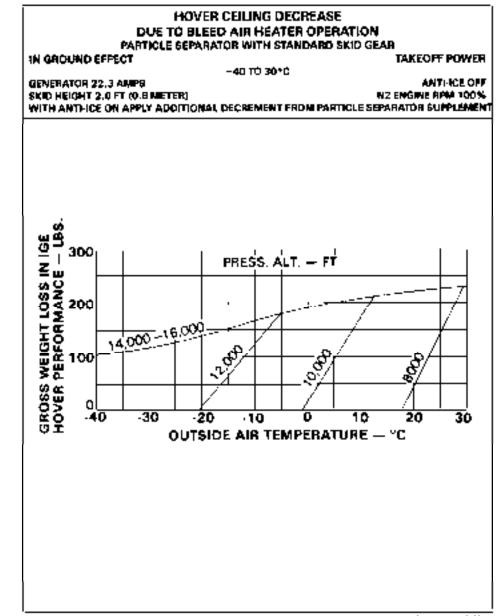
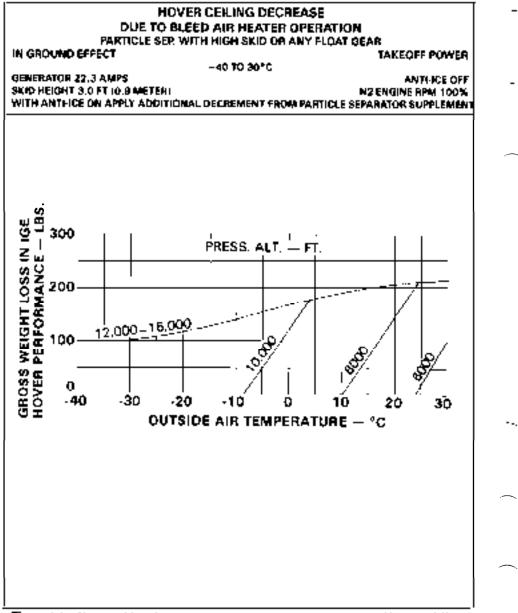


Figure 4-1. Hover celling decrease due to bleed air heater operation (Shret 4 of 6)





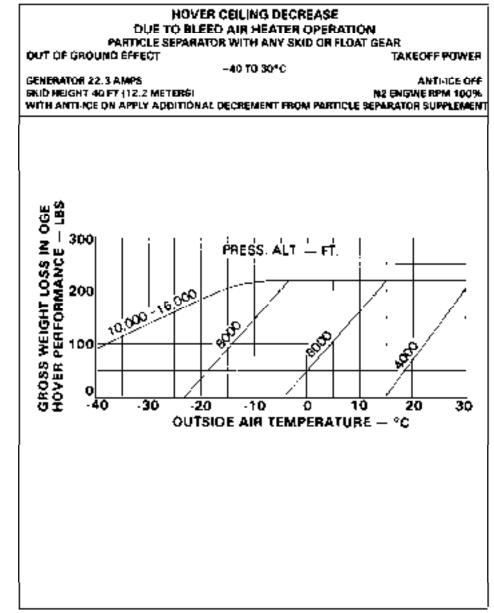


Figure 4-1. Nover calling decrease due to bleed air heater operation (Sheet 6 of 6).

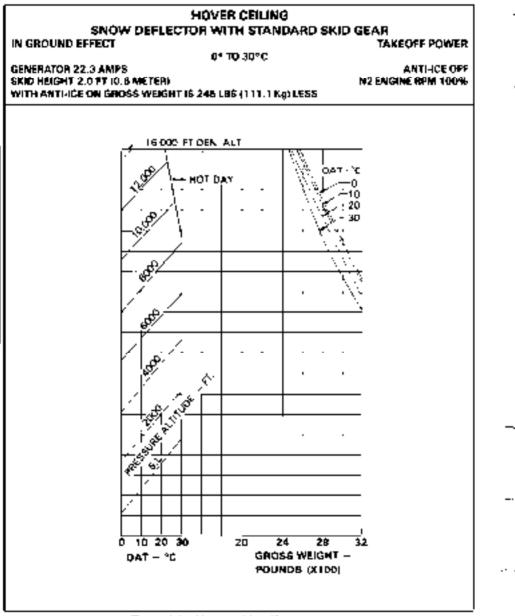


Figure 4-2. Hover ceiling (Sheet 1 of 6)

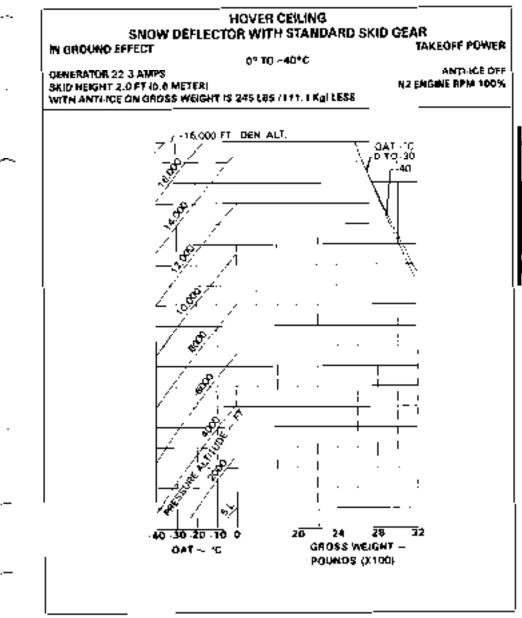
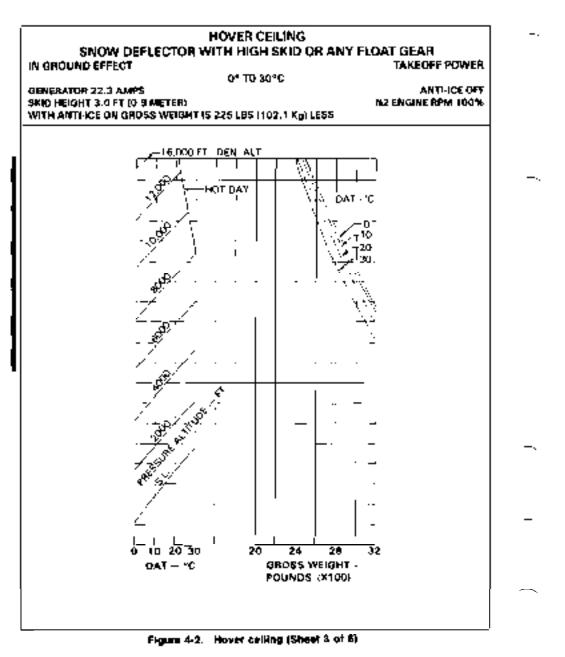


Figure 4-2. Hover celling (Sheet 2 of 6)



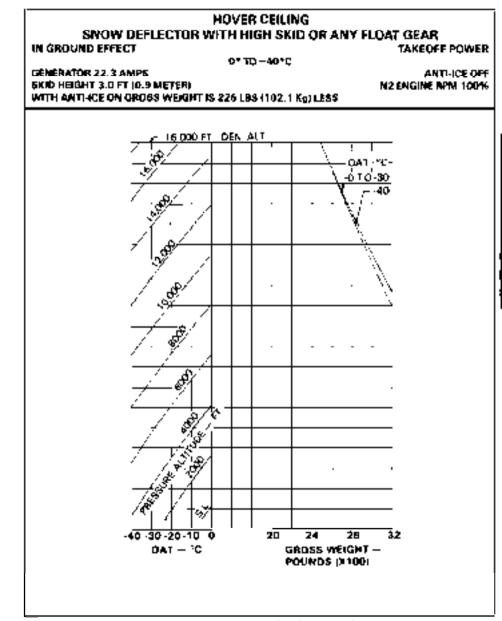


Figure 4-2. Hover celling (Sheet 4 of 6)

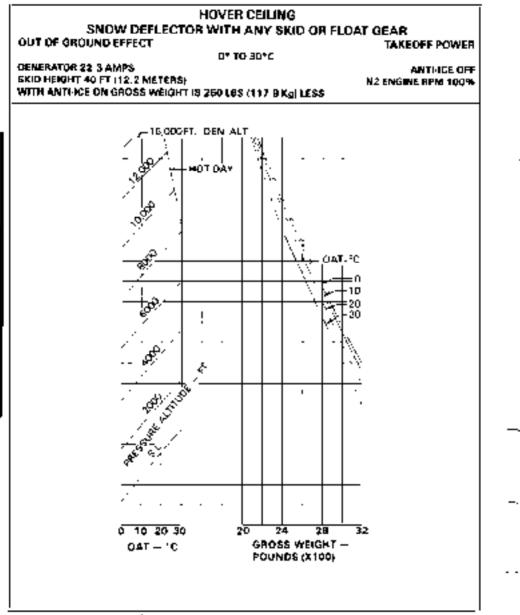


Figure 4-2. Hover celling (Sheet 6 of 6)

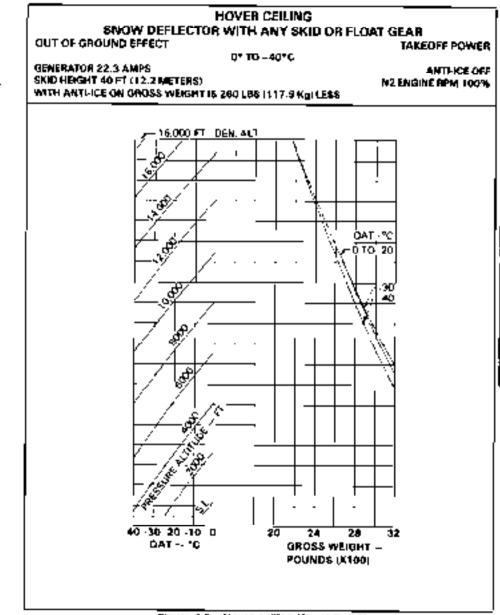
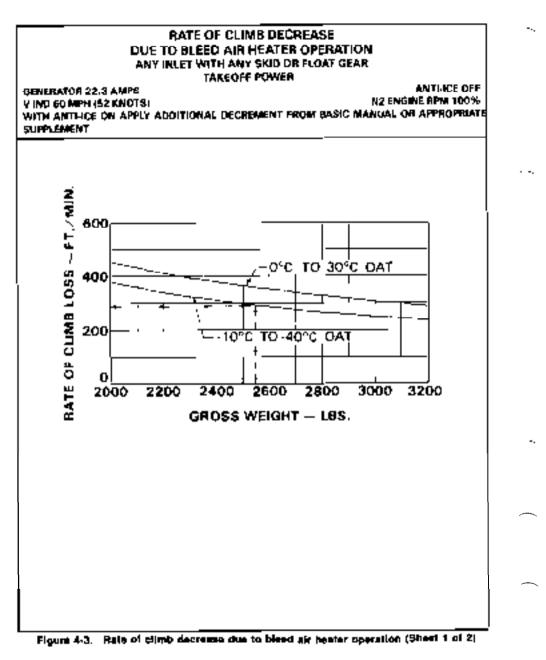


Figure 4-2. Hover ceiling (Sheet 5 of 5)



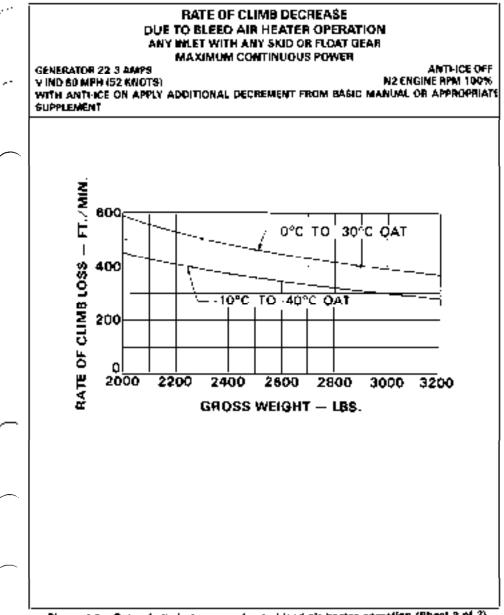


Figure 4-3. Rate of climb decrease due to bleed bit heater operation (Sheet 2 of 2)

BHT-206B3-FMS-21



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

AREA NAVIGATION SYSTEM 206-706-006

CERTIFIED NOVENBER 14, 1980

This supplement shall be atlached to Model 20583 Flight Monual when Area Navigation System Isli has been instation.

Intermetion contained herein supplements intermetion of basic Flight Manual. For Limitations, Procedures, and Performance Cate not contained in this supplement, consult basic Flight Manual.

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ROTORCRAFT CERTIFICATION OFFICE FEDERAL AVIATION ADMINISTRATION FT. WORTH, TX 76199-0170

NOTE

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GENERAL INFORMATION

The Area Navigation System, Collins ANS-351, consists of a computer and a remote annunciator adjacent to the MSI. The RNAV operates to conjunction with NAV 1 only.



LIMITATIONS

For IFR operations, use of the Area Navigation System is limited to enroute pevigetion only. Terminal nevigetion is not exthorized.

Section 2

NORMAL PROCEDURES

NOTE

For operating procedures, refer to ANS-351 Area Nevigation System Priot's Guids, printed by Collins Radio Group, Rockwell International. For operation in RNAY mode, the RNAY button on the DME control panel must be depressed. The amber RNAV light (located in javar laft corner of MSI) will illuminate when RNAY button is depressed. When RNAV light is extinguished, the HSI operates in normal YORALOC mode.



EMERGENCY AND MALFUNCTION PROCEDURES

II Area Navigation System bonomes inoperative, resume normal nevigation using NAV 1.

Section 4

PERFORMANCE

No change from basic manual.

BHT-206B3-FMS-22



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

62 INCH DIAMETER TAIL ROTOR BLADES 206-010-750

CERTIFIED FEBRUARY 13, 1992

This supplement shell be attached to Model 20683 Flight Manual when 52 Inch Dismeter Tail Roter Biedes. M has been installed.

Information contained herein supplements information of basic Flight Manual. For Limitations, Procedures, and Performance Data not contained in this supplement, consult basic Flight Manual.

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GENERAL INFORMATION

This supplement provides have performance with the 205-010-750 tail rates blades installed.



LIMITATIONS

No change from basic manual.

Section 2

NORMAL PROCEDURES

No change from basic moruel-



EMERGENCY PROCEDURES

No change from basic menual,

Section 4

PERFORMANCE DATA

IGE AND OGE HOVER CEILING CHARTS

The Haver Calling charts present haver performance (allowable gross weight) for conditions of pressure althude and CAT. The charts are divided into two areas. AREA A (White area) as shown on the Hover Celling charts presents hover performence for which controllebility has been demonstrated in aldeward and rearward relative wind conditions up to 20 MPH (17 knots).

CAUTION

ENGINE TOT WILL RISE NOTICEABLY WHEN HOVERING DOWN WIND, AVOID MOVERING DOWN WIND WHEN OPERATING NEAR TOT LIMITS.

AREA B (Sheded area) so shown on the Nover Calling charts presents hover performance that can be realized in CALM WINDS or winds outside the CRITICAL RELATIVE WIND AZMUTH AREA

HOVER CEILING

The following example is for use with the Hover Calling in Ground Effect, Takeoff Power, AniHon Off Chart and is typical for use of Hover Calling charts.

EXAMPLE

Determine gross weight hover capability at a site having the following conditions:

Prossure Allitude = 70,000 Ft. Outside Air Temperature = 20°C For the above example the pilot must refer to the 0°C to 45°C Mover Celling charts.

From the appropriate IGE Charl obtain:

A maximum of 2645 pounds (1189.7 Stiegrams) for all allowable wind conditions and a maximum of 3145 pounds (1426.6 kilograms) when wind conditions are calm or outside the critical wind azimuth area.

From the appropriate OGE Chart Obtain-

A maximum of 2230 pounds (1011.5 kilograma) for all allowable wind ---.

conditions and a maximum of 2710 pounds (1229.3 kilograms) when wind conditions are calm or outside the critical wind azimuth area.

EXAMPLE

Determine gross weight hover capability at a site having the following conditions:

Pressure Allitude - 12,000 PL Outside Air Temperature = -15°C For the above sample the pilot must refer to the 0°C to -40°C Hover Calling Charts.

From the appropriate IGE Charl Oblain:

A meximum of 2025 pounds (1281.4 kilograme) (or all allowable wind conditions and a maximum of 3200 pounds [1451.5 kilograme) when wind conditions are calm or outside the critical wind azimuth area.

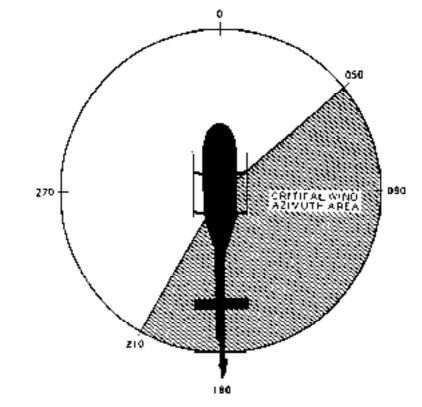
From the appropriate DDE Chart obtain:

A maximum of 2395 pounds (1086.4 kilograms) for sli allowsble wind conditions and a maximum of 2920 pounds (1324.5 kilograme) when wind conditions are calm or outside the ortical wind azimuth area.

NOTE

The in Ground Effect (IGE) and Out Of Ground Effect (OGE) Hover Celling charts are presented separately for the temperatures from 0°C to 46°C and for temperatures from 0°C to 40°C, only for starty of presentation.

- ----



CRITICAL RELATIVE WIND AZEMUTH AREA

NOTE

Tejl rotos control margin and/or control of engine patemeters (TOT and torque) may preclude operation in AREA 8 of the Mover Ceiling Charts when the relative wind is in the Ceilical Wind Aximuch Area.

Figure 4-1. Critical Relative Wind Azimuth Area

BASIC HELICOPTER

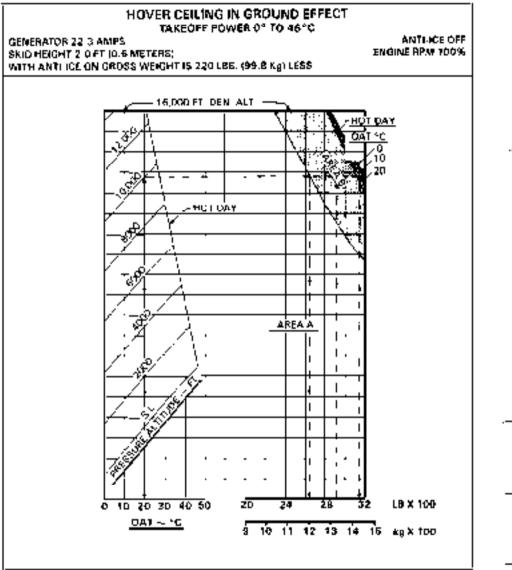


Figure 4-2. Mover celling (Street 1 of 30)

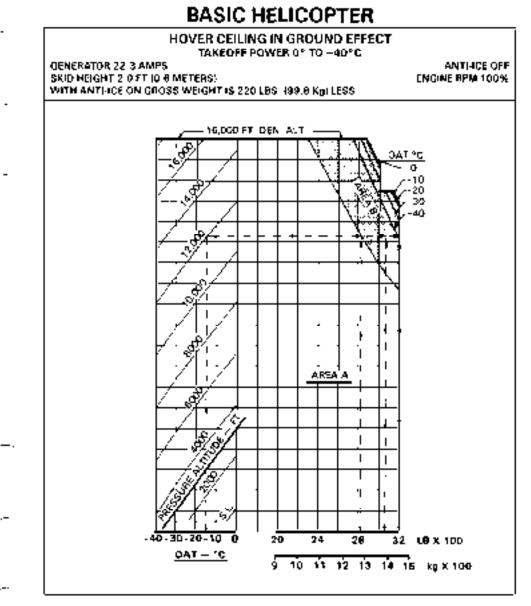


Figure 4-2. Hover ceiling (Sheet 2 of 30)

BASIC HELICOPTER

HOVER CEILING OUT OF GROUND EFFECT TAKEOFE POWER 0* TO 46*C

CENERATOR 22 3 AMPS SKID HENGHT 40 FT 172.2 METERS) ANTI-ICE OFF ENGINE APM 100%

WITH ANTI-ICE ON GROSS WEIGHT IS 205 L86 (133.8 Kg) LESS

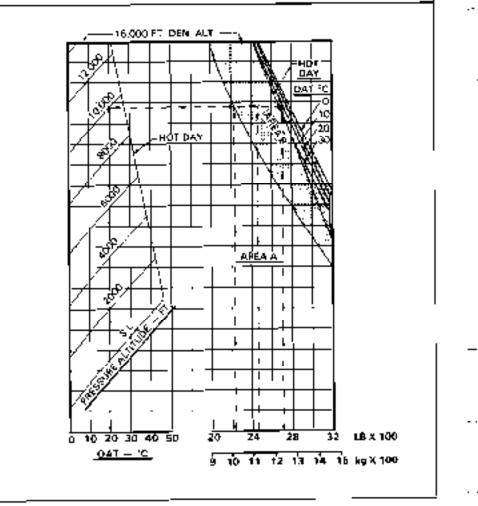


Figure 4-2. Hover celling (Sheet 3 of 30)

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BASIC HELICOPTER HOVER CEILING OUT OF GROUND EFFECT TAKEOFF POWER 0° TO -40°C GENERATOR 22.3 AMPS ANTI-ICE OFF SKID NEIGHT 40 FT 112 7 METERS) ENGINE RPM 100% WITH ANTI-ICE ON GROSS WEIGHT IS 295 LB5, 1133.8 Kgl LE55 HE DOO FT DEN ALT -Ð OAI "0 2 D \$, 10 73 ಕ್ರ d٢ طخ مجتى I I ą Ş ı ı AREA A į. ø I ć L L -40 30-20-10 n źū 24 28 32 LB X 100 OAT C 9 10 11 12 13 14 TS kg X 100



7

FIXED FLOATS

HOVER CEILING IN GROUND EFFECT TAKEOFF POWER 0* TO 46°C

GÉNERATÓR 22.3 AMPS FLÖAT HEIGHT 3.0 FT (0.9 MÉTEKS) WITH ANTI ICE ON GROSS WÉIGHT IS 200 LBS 190.7 Kgi LÉSS ANTHOS OFF ENGINE RPM 100%

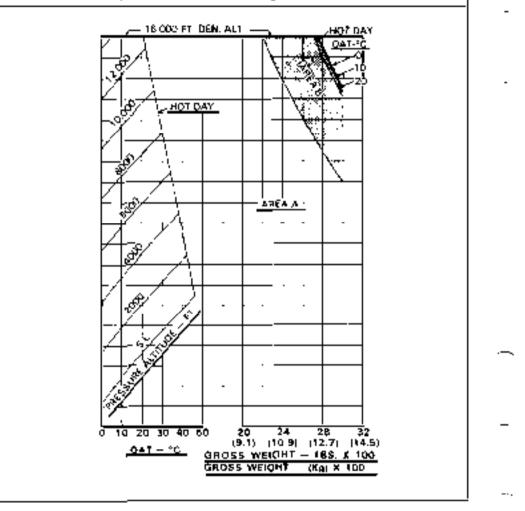


Figure 4-2. Hover ceiling (Sheet 5 of 30)

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FIXED FLOATS

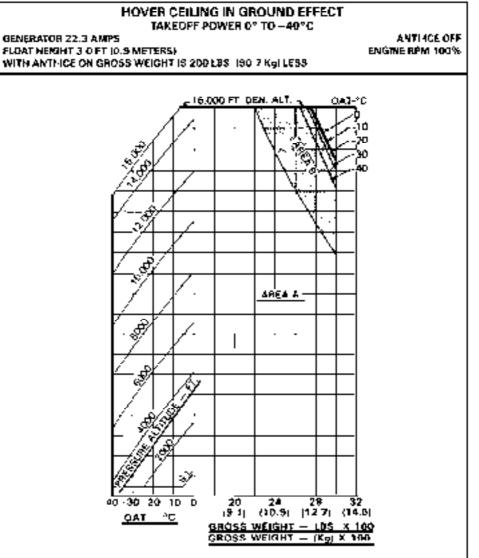


Figure 4-2. Mover celling (Sheet 6 of 30)

9

- · ·

CARGO HOOK

HOVER CEILING IN GROUND EFFECT TAKEOFF POWER 0° TO -40°C

GENERATOR 22.3 AMPS

ANTI-ICE OFF ENGINE RPM 100%

HIGH SKID GEAR 3 O FT 19-0 METERSI WITH ANTI-ICE ON GROSS WEIGHT IS 200 LBS. (30,7 Kg) LESS.

SKID NEKIHIT LOW SKID GEAR 4.0 FT (7.2 METERS)

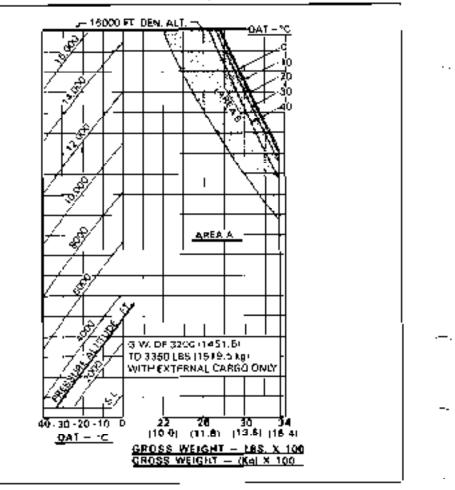


Figure 4-2. Hover celling (Sheet 7 of 30)

10

ANTI-ICE OFF

ENGINE RPM 100%

CARGO HOOK

HOVER CEILING IN GROUND EFFECT TAKEOFF POWER D* TO 45*C

GENERATOR 22 3 AMPS SKID MEIGHT LOW SKID GEAR 4 0 FT (1.2 METERS) MIGH SKID GEAR 3.0 FT (9 0 METERS) WITH ANTI-ICE ON OROSS WEIGHT IS 200 LBS (90.7 Kgi LESS)

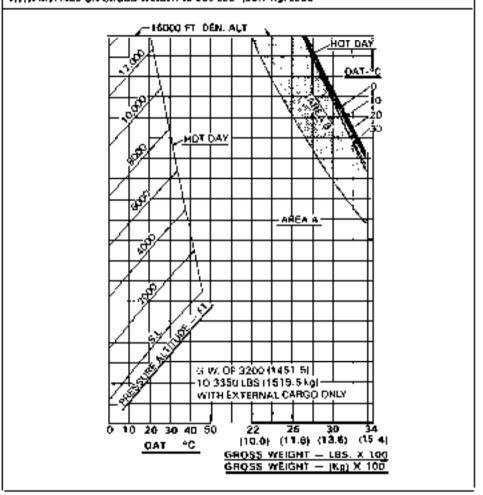


Figure 4-2. Nover celling (Sheet 8 of 30)

CARGO HOOK

HOVER CEILING OUT OF GROUND EFFECT TAKEOFF POWER 0* TO -40°C

GENERATOR 22 3 AMPS SKID HEIGHT 40 FT (12 2 METERS) WITH ANTLICE ON CODSS WEIGHT IS 205 ANTI-ICE OFF ENGINE RPM 100%

WITH ANTI-ICE ON GROSS WEIGHT IS 295 LBS. (133 B Kg) LESS

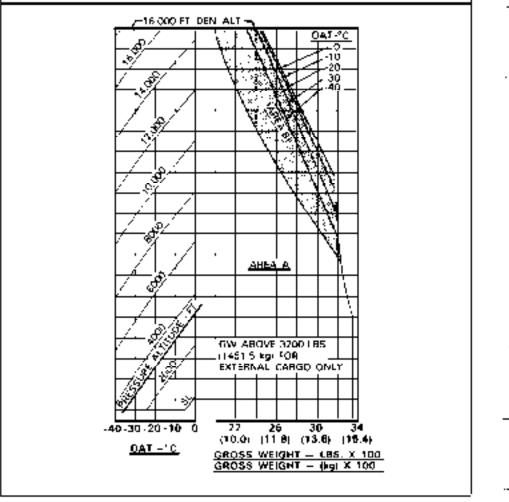


Figure 4-2. Hover celling (Sheet 9 of 30)

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CARGO HOOK

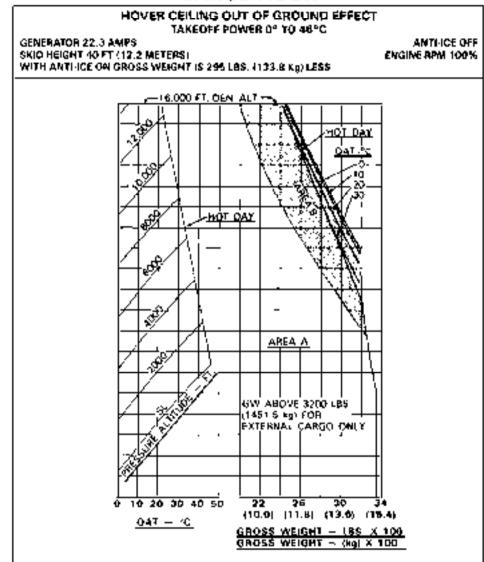


Figure 4-2. Hover ceiling (Sheet 10 of 30)

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HIGH SKID OR LIGHTWEIGHT EMERGENCY FLOTATION LANDING GEAR

HOVER CEILING IN GROUND EFFECT TAKEOFF POWER 0° TO 46 °C

GENERATOR 22 % AMPS. SKID HEIGHT 3 O FT 10 9 METERSH

ANTI-ICE OFF ENGINE RPM 100%

WITH ANTI-ICE ON GROSS WEIGHT IS 200 LHE. (90.7 Kg) LESS

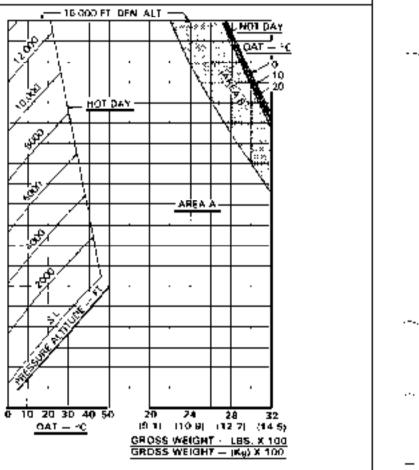


Figure 4-2. Hover celling (Sheet 11 of 30)

HIGH SKID OR LIGHTWEIGHT EMERGENCY FLOTATION LANDING GEAR

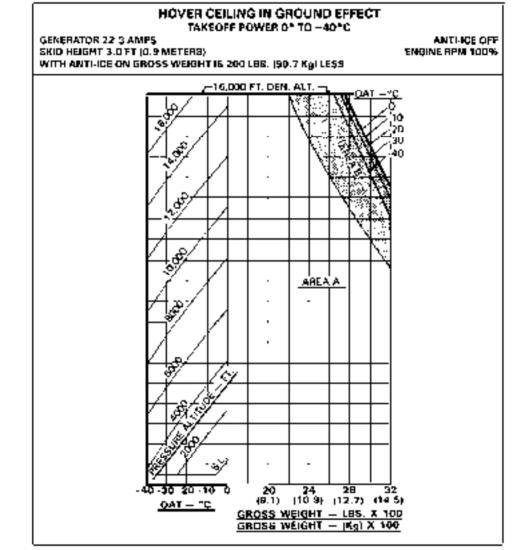


Figure 4-2. Hover calling (Sheet 12 of 30)

ANTI-ICE OFF

ENGINE RPM 100%

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PARTICLE SEPARATOR

HOVER CEILING IN GROUND EFFECT TAKEOFF POWER 0° TO 46°C

GENERATOR 22.3 AMPS SKID HEIGHT 2.0 FT 10.6 METERSI WITH ANTI-ICE ON GROSS WEIGHT IS 245 LBS [111.1 Kg] LESS

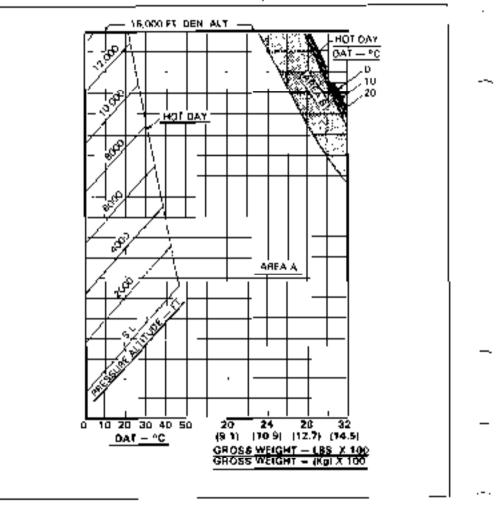


Figure 4-2. Hover ceiling (Sheet 13 of 30)

PARTICLE SEPARATOR

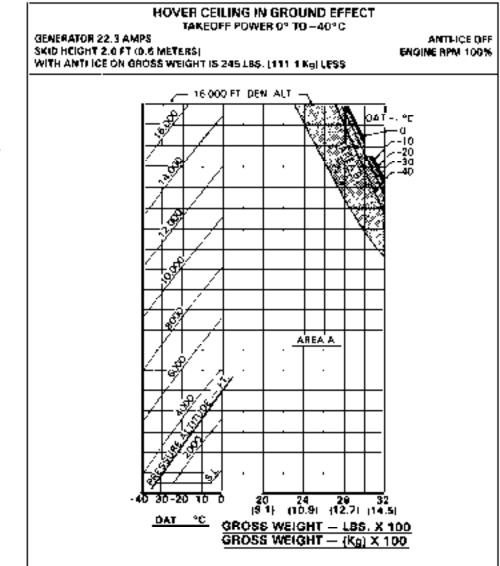


Figure 4-2. Hover celling (Sheet 14 of 30)

ANTI ICE OFF.

ENGINE RPM 100%

PARTICLE SEPARATOR

HOVER CEILING OUT OF GROUND EFFECT TAKEOFF POWER 0" TO 48"C

GENERATOR 22.3 AMPS SKID HEIGHT 40 FT (12.2 METERS) WITH ANTI-ICE ON GROSS WEIGHT IS 250 L86. (117 B Kg) LESS

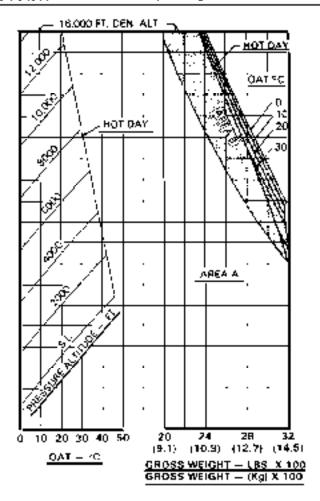


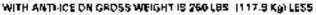
Figure 4-2. Hover celling (Sheat 15 of 30)

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PARTICLE SEPARATOR

HOVER CEILING OUT GROUND EFFECT TAKEOFF POWER 0* TO ~40*C

GENERATOR 22.3 AMPS SKID HEIGHT 40 FT (12.2 METERS) ANTI-ICE OFF ENGINE APM 100%



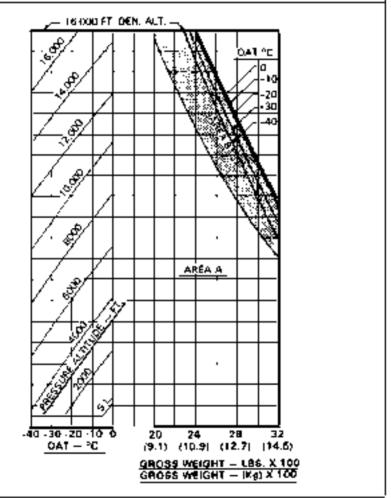
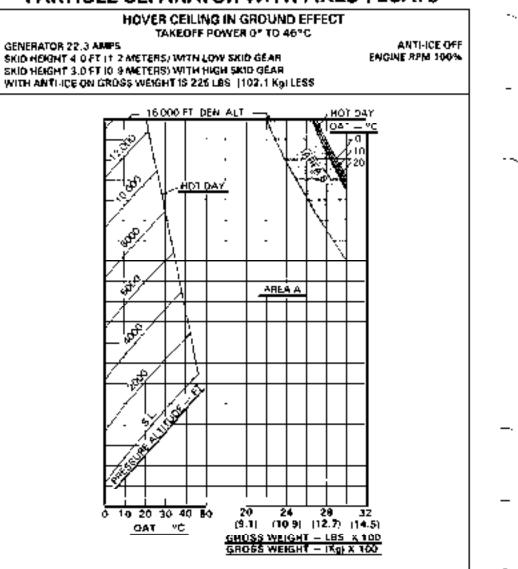


Figure 4-2. Hover celling (Sheet 16 of 30)

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PARTICLE SEPARATOR WITH FIXED FLOATS



Pigure 4-2. Hover celling (Sheet 17 of 30)

PARTICLE SEPARATOR WITH FIXED FLOATS

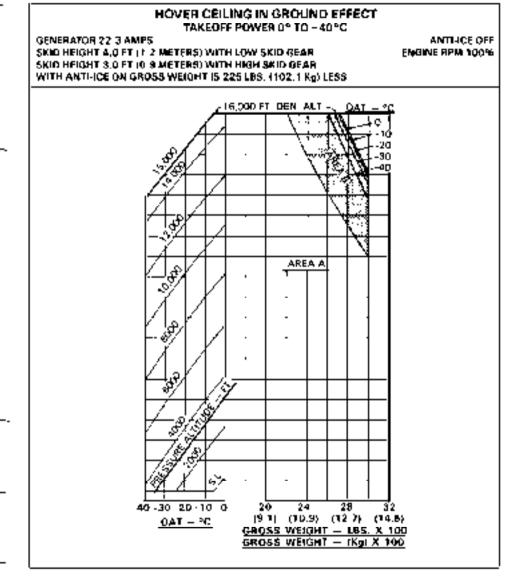


Figure 4-2. Hover celling (Sheet 18 of 30)

PARTICLE SEPARATOR WITH CARGO HOOK

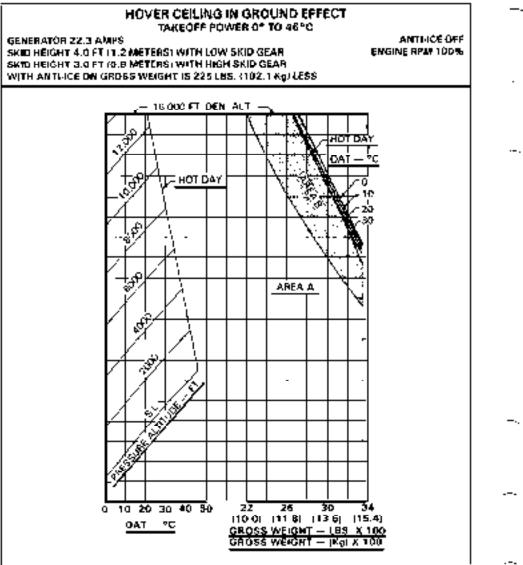


Figure 4-2. Hover ceiling (Sheet 19 of 30)

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BHT-20583-FMS-22

ANTI-ICE OFF

ENDINE RPM 100%

PARTICLE SEPARATOR WITH CARGO HOOK

HOVER CEILING IN GROUND EFFECT TAKEOFF POWER 0* TO -40*C

GENERATOR 22.3 AMPS SKID NENGHT 4 Q FT (1.2 METERS) WITH LOW SKID GEAR SKID MEIGHT 3 Q FT (D 9 METERS) WITH MIGH SKID GEAR WITH ANTLICE ON GROSS WEIGHT IS 225 LBS. (102-1 Kg) UESS

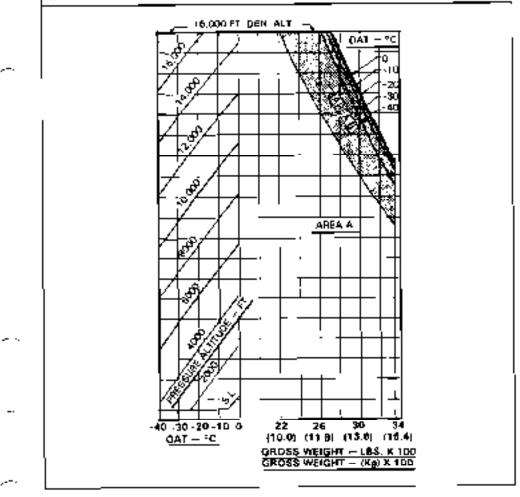


Figure 4-2. Hover calling (Sheet 20 of 30)

ANTI-ICE OFF

ENGINE APM 100%

·--.

PARTICLE SEPARATOR WITH CARGO HOOK

HOVER CEILING OUT OF GROUND EFFECT TAKEOFF POWER 0° TO 46°C

GENERATOR 22.3 AMPS

SKID HEIGHT 40 FT 112.2 METERSI WITH LOW SKID GEAR WITH ANTI-ICE ON GROSS WEIGHT IS 260 LSS. [117.9 Kg] LESS.

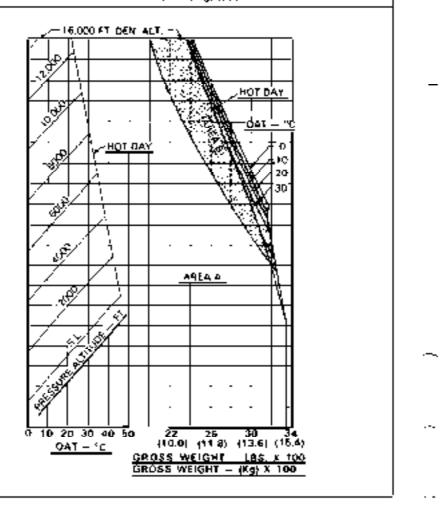


Figure 4-2. Hover celling (Sheet 21 of 30)

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PARTICLE SEPARATOR WITH CARGO HOOK

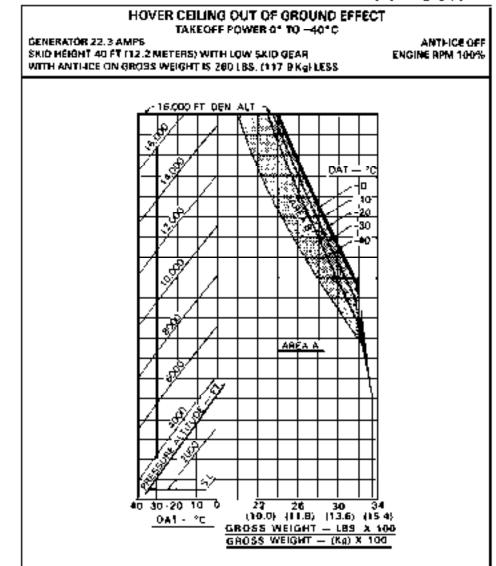


Figure 4-2. Hover celling (Sheet 22 of 30)

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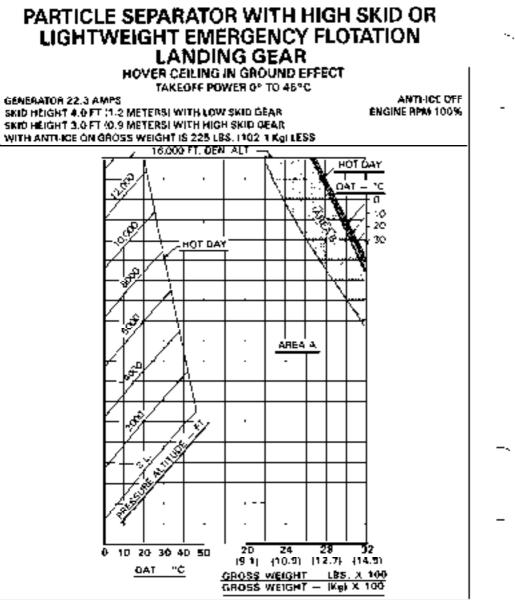


Figure 4-2. Hover celling (Sheet 23 of 30)

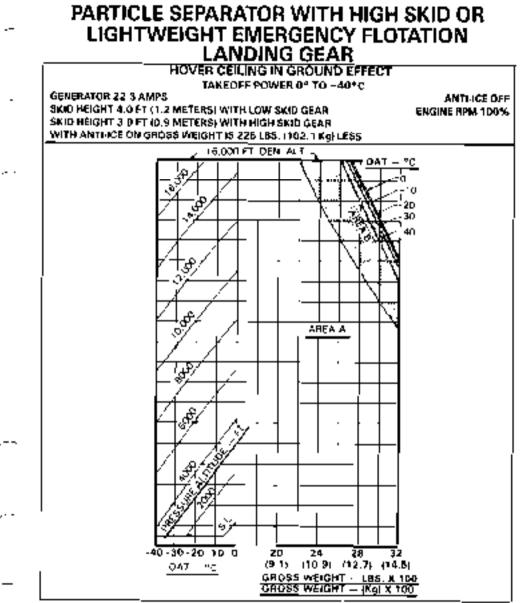


Figure 4-2. Hover celling (Sheet 24 of 30)

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BLEED AIR HEATER AND SNOW DEFLECTOR WITH STANDARD SKID GEAR



GENERATOR 22.3 AMPS SKID HEIGHT 2.0 FT (0.6 METERS) WITH ANTI-ICE ON GROSS WEIGHT IS 245 LBS (111-1 Kalless

ANTHICE OFF ENGINE RPM 100%

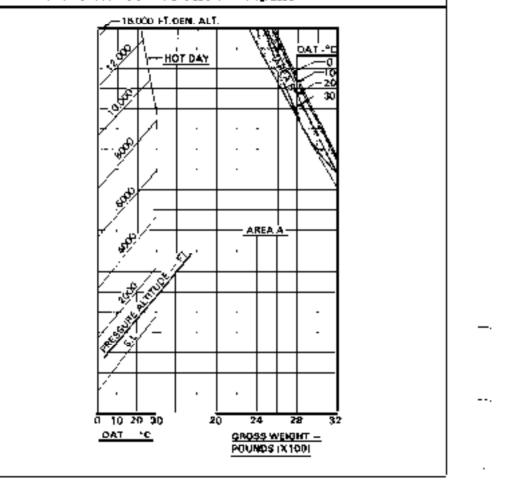


Figure 4-2. Hover celling (Sheet 25 of 30)

BLEED AIR HEATER AND SNOW DEFLECTOR WITH STANDARD SKID GEAR

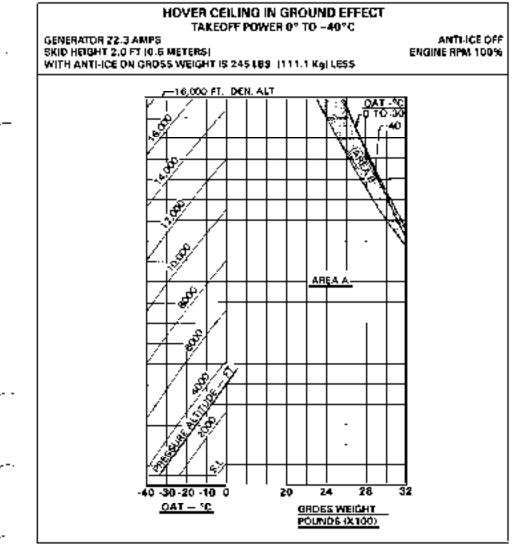


Figure 4-2. Hover celling (Sheet 26 of 30)

BLEED AIR HEATER AND SNOW DEFLECTOR WITH HIGH SKID OR ANY FLOAT GEAR

HOVER CEILING IN GROUND EFFECT. TAKEOFF POWER 0* TO 30*C

GENERATOR 22 3 AMPS SKID HEIGHT 3.0 FT 10 9 METERSI

ANTI ICE OFF. ENGINE RPM 100%

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WITH ANTI ICL ON GROSS WEIGHT IS 225 LBS. [102.1 Kg] LESS

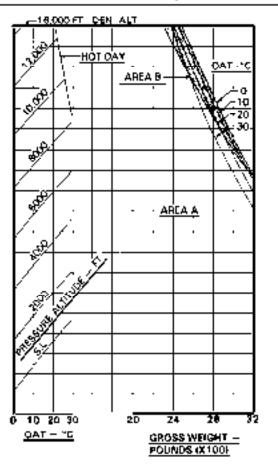


Figure 4-2 Hover celling (Sheet 27 of 30)

ANTHICE OFF

ENGINE RPM 100%

BLEED AIR HEATER AND SNOW DEFLECTOR WITH HIGH SKID OR ANY FLOAT GEAR

HOVER CEILING IN GROUND EFFECT TAKEOFF POWER 0° TO -40°C

GENERATOR 22.3 AMPS

SKID HEIGHT 3.0 FT (0.9 METERS)

WITH ANTHOF ON GROSS WEIGHT IS 225 LBS 1102 1 Kgl LESS.

6.000 F1. DEN AUT. TO 30 40 ÷ đ AREA A æ . ŝ 6 28 52 24 40-30-20-10 ъ 20 OAT = "C<u>GROSS WEIGHT —</u> POUNDS (X100)

Figure 4-2. Hover celling (Sheet 28 of 30)

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BLEED AIR HEATER AND SNOW DEFLECTOR WITH ANY SKID OR FLOAT GEAR

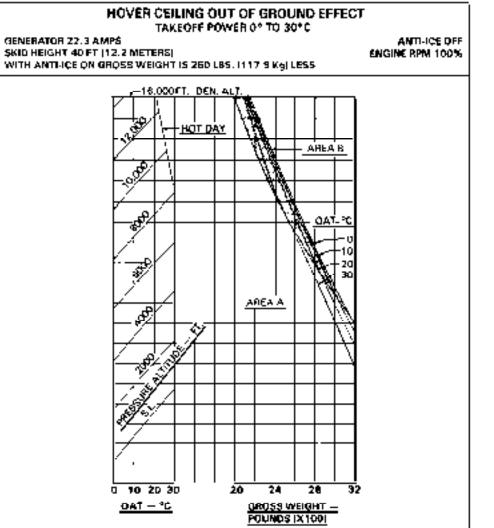


Figure 4-2. Hover celling (Sheet 29 of 30)

BLEED AIR HEATER AND SNOW DEFLECTOR WITH ANY SKID OR FLOAT GEAR

HOVER CEILING OUT OF GROUND EFFECT TAKEOFF POWER 0° TO 40°C

GENERATOR 22 3 AMPS

SKID HEIGHT 40 FT 112 2 METERS

ANTI ICE OFF ENGINE RPM 100%

WITH ANTHCE ON GHOSS WEIGHT IS 260 LBS. (117.9 Kg) LESS

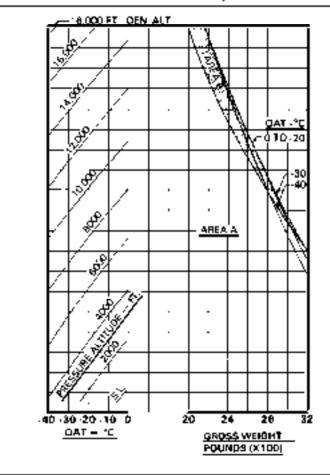


Figure 4-2. Hover celling (Sheet 30 of 30)

BHT-206B3-FMS-26



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ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

LIGHTWEIGHT EMERGENCY FLOTATION LANDING GEAR 206-706-211

CERTIFIED JULY 1, 1977

internation contained herein supplements internation of basic Flight Manual For Limitations, Procedures, and Performance Data not contained in this supplement, consult basic Flight Manual,

20479/01/01/01/05 20079/01/01/05/05 20079/01/01/05 200705/01/01/05/05 200805/01/01/05/05/05 200805/01/01/05/05/05 200805/05/05/05/05 200805/05/05/05/05



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NOTICE PAGE

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ROTORCRAFT CERTIFICATION OFFICE FEDERAL AVIATION ADMINISTRATION FT. WORTH, TX 76193-0170

GENERAL INFORMATION

The Lightweight Emergency Rotation Kir (206-706-211) consists of high skid gear, emergency floats stached to main skid panels, infinition system, position lights, and stacking hordware, installation of this kit permits operation over land or water. First initiation time is approximately 5 seconds.



LIMITATIONS

TYPE OF OPERATION

Operation with the pop-out floets inflated is limited to a flight to a servicing facility for repeaking and recharging the system. Amphibious operations are not approved.

The Rosts and covers must be installed and ground handling wheals removed for all flight operations.

Accomplish preflight float system check daily prior to performing over water operations.

Flight operations requiring the use of the external holist ARE PROMIBITED and the system SHALL BE DEACTIVATED when Nonta are installed unless Cable Guard Kit (208-705-214) is installed.

If Cable Gward Kit is installed, hoist cable and hook shall be stowed prior to flopt initiation.

AIRSPEED LIMITATIONS

FLOATS STOWED

- --

Flogts slowed, covers installed — Same as basis helicopter.

Deers on or off in any combination. Same as basic helicopter.

FLOATS INFLATED

Maximum inflation strepsed — 50 mph (52 knots) 1AS.



DURING THE INFLATION CYCLE UNDESIRABLE PITCHING WILL OCCUR AT AIRSPEEDS ABOVE 60 MPH (52 KNOTS) IAS.

Maximum ellowable s)repood, ficals Infieled — 60 mph (69 knots) IAS.

Maximum AUTOROTATION sirspeed, florisinfinied — 70 mph (50 knois) IAS.

RATE OF CLIMB LIMITATIONS

Maximum rate of climb with ficate inflated is 1000 lest per minute.

CENTER OF GRAVITY LIMITS

Actual weight changes shak be determined when hit is installed and beinet readjusted, if necessary, to return empty weight CG to within allowable limits. Refer to Center of Gravity vs Weight Empty Chart in GHT-20683-MM-1.

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PLACARDS

FLOAT ARMINGUNFLATION ABOVE 60 MPH PROMINITED

MAXIMUM ALLOWAQLE AUSPEED FLOATS INFLATED - 83 MPH (64 KNOTS) LAS

MANIMUM AUTOROTATION AIRSPEED, FLOATS INFLATED -70 MPH (60 KNOTS) (AS FLOAT INFLATION

NORSE CABLE AND HODK MUST BE STOWED PRIOR TO FLOW FINFLATION

Placetol installed as part of Databa Guard Kie (208-705-214)



NORMAL PROCEDURES

EXTERIOR CHECK

NOTE

Ensure that Cable Guard Kit (206-705-214) is installed if external hoist operations are to be conducted.

Pipels slowed.

Nitrogen Aneo — Condition and security.

Figer covers clean and secured.

Float inflation cylinder — Check for proper temperature and attitude ve inflation pressure. Refer to placerd on cylindet. Check cannon plug for security.

INTERIOR CHECK

PREFLIGHT FLOAT SYSTEM Check

FLOAT MANUAL ARM switch ~- OFF (guard olosed).

FLOAT POWER circuit breaker — Check in.

FLOAT TEST and FLOAT ARM Nghim - - Press to lest.

PLOAT TEST switch - FLOAT TEST position, and hold.

FLOAT INFLATION trigger swhich -- Pull - On, FLOAT TEST light Illuminated, then talease.

FLOAT TEST switch — Release, FLOAT TEST light Extinguished.

FLOAT MANUAL ARM switch — POWER (guard open), FLOAT ARM light illuminated, then switch OFF (guard closed), FLOAT ARM light Extinguished.

IN-FLIGHT OPERATIONS

OVER WATER OPERATION

FLOAT MANUAL ARM switch -- POWER (guard open).

FLOAT ARM light — Illuminated.

CAUTION

DURING FLIGHT AT ALTITUDES ABOVE 500 FEET AND AT AIRSPEEDS OF 50 MPH (52 KNOTS) IAS AND ABOVE, THE SYSTEM SHOULD BE Deactivated by positioning the FLOAT MANUAL ARM SWITCH IN THE OFF POSITION (DUARO CLOSED).

Ream system prior to landing.

OVER LAND OPERATION

FLOAT MANUAL ARM switch -- OFF.

·---~

DESCENT AND LANDING -

WARNING

IF THE CG IS AFT OF STATION 1 1 2 . 7 . PRACTICE A UTO A OTATIONAL TOUCHDOWNS SHOULD BE AVAILED DUE TO NOSE DOWH PITCHING.



RUN-ON LANDINGS ON OTHER THAN A NARD FIRM SURFACE SHOULD BE EXERCISED WITH CAUTION.

NOTE

Tail-tow, run-on landings should be evolved to pretent noted by pretent noted by pretent noted by the pretent of the pretent o



EMERGENCY AND MALFUNCTION PROCEDURE

Reduce sinspeed below Maximum initiation Airspeed -- 60 mph (52 knots) IAS.

Establish autorolation or low power descent at approximately 500 feet per minute.

FLOAT MANUAL ARM switch - POWER (guard open).

FLOAT ARM light — illuminated.

CAUTION

DO NOT (NFLATE FLOATS MORE Than 2000 feet above Anticipated landing Surface.

FLOAT INFLATION Irigger switch Pull On.

NOTE

During flight with floats infisied, a random bumping of the skid gear

crosstube against the landing gear eaddlee will occur. Acduoing alrapend will reduce bumping.

AFTER EMERGENCY WATER

After landing, inspect the belicopter for possible damage, if mailunction was cause of landing, correct mailunction.

If no damage has occurred to helicopier and malfunction has been corrected, the helicopier can be forfied to the nearest mainsmance facility to repark froms and charge system. The terrying alrepsed to restricted to 60 mph (69 knots) (AS. The maximum rate of climb while terrying is 1000 feet per minute. I

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PERFORMANCE

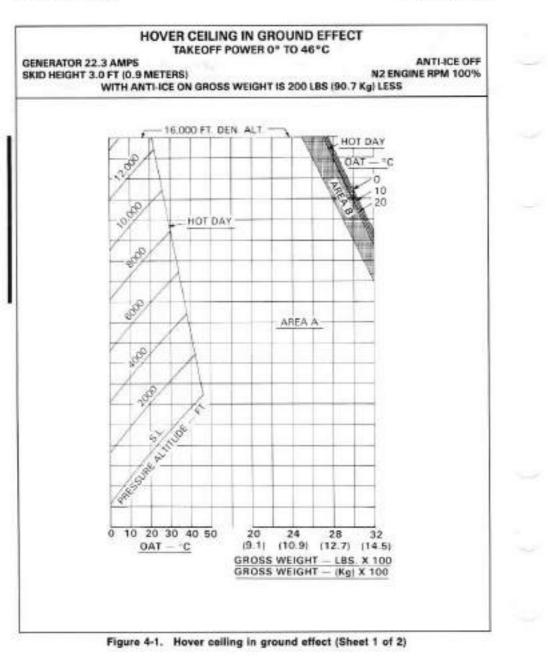
HOVER CEILING - FLOATS STOWED

Out of ground effect hover performance is the same as basic helicopter. For in ground effect hover performance, relar to Hover Calling in Ground Effect (Rgure 4-1).

NOTE

The Hover Coiling chatts presented in this manual reflect performance with the 65 Inch diameter tell rotor (P/N 206-016-201) installed. For performance with the 62 inch diameter (all rotor (P/N 206-010-750), refer to BHT-20683-FMS-22.

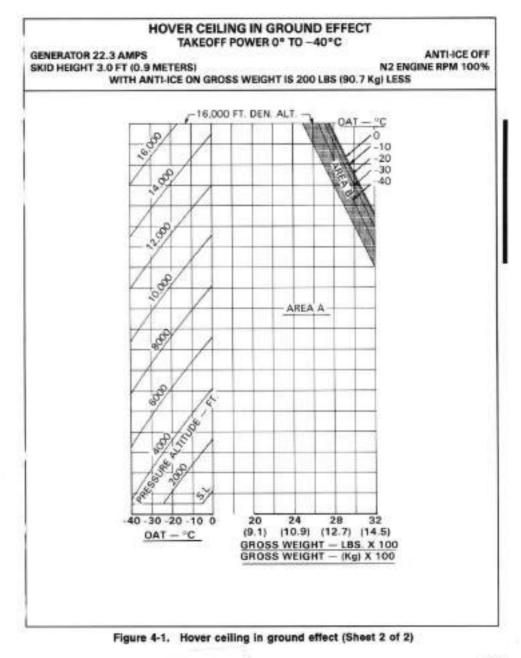
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ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

MAIN ROTOR BLADE FOLDING 206-898-014

CERTIFIED APRIL 25, 1968

This supplement shall be alisched to Model 20683 Flight Manuel when Main Rotor Blade Folding, kit has been Installed.

Information contained herein supplements information of basic Flight Manual. For Limitations, Procedures, and Parformance Data not contained in this supplement, consult basic Flight Manual.

СОРТНОНТ НОТ ВО СОРУДИИ ВНЕ БОЛИТИКАТОР БОЛИТИКАТОР И СТАТОРИСТИКАТОР И СТАТОРИСТИКАТОР И СТАТОРИСТИКАТОР И СТАТОРИСТИКАТОР И СТАТОРИСТИКАТОРИСТИКАТОР И СТАТОРИСТИКАТОРИСТИВИ ТО СЛИВИ СТИВИ СО С ПРИСТИВИ ТО С С ПО СТИВИ СТИ С С ПО С С С



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MANAGER

 ROTORCRAFT CERTIFICATION OFFICE FEDERAL AVIATION ADMINISTRATION FT. WORTH, TX 76193-0170

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NOTE

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GENERAL INFORMATION

The Main Rotor Blade Folding system permits belicopter storage in smaller places. The system consists of a clamp, rack assembly and the required hardware provisions to complete the installation.



LIMITATIONS

No change from basic manual.



NORMAL PROCEDURES

AIRCRAFT LOGBOOK Entries

Ensure that helicopter logbook entries indicate that rolor blade boits and latch nuts have been torqued as permaintenance manual.

EXTERIOR CHECK

Assure blade leading edge latch boil nuts are aligned with index marks on latch after blades have been unfolded.

Check blade trailing adge latch bolt note are aligned with index marks on latch within approximately 2 points after bladge have been unfolded. Theroughly inepect to ensure that all blade folding equipment has been terrored as necessory and hattcopter has been prepared for llight.

Verify that binde catch tange are seated on binde grip plates.

Check must below rolor hub to ensure that main rotor hub clamp assembly has not demaged ment.

NOTE

Excessive main rotor 1/rev vibrations may indicate that blade alignment has been allected.



No change from basic menual.

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PERFORMANCE

No change from basic manual.



ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

UNITED KINGDOM REGISTERED HELICOPTERS

CAA CERTIFIED NOVEMBER 9, 1978

This supplement shell be attached to Model 20683 Filght Manual when neticopter is registered to United Kingdom.

Information contained herein supplements information of basic Filght Manuel. For Limitetions, Procedures, and Performance Data not contained in this supplement, consult basic Filght Manual.

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Section 1

LIMITATIONS

CATEGORY AND USE OF HELICOPTER

The Bell Model 2088 Jet Panger III helicopier is efigible for certification in the United Kingdom in the Transport Category (Passenger). This helicopier may, however, be restricted to another category and to a particular use and this will be stated in the certificate of einporthiness.

When an external freight carrier fe suspended from the holloopter, the helicopter shall not be flown for the purpose of public transport.

When Hown for public transport, the halloopter is classified in performance Group B and the true sinspeed to be used for compliance with the Air Navigation logislation governing flight over water is 100 knots.

Air Nevigation Order requires Group B helicoptem to carry flame for night flight.

MAXIMUM NUMBER OF OCCUPANTS

The meximum number of occupants including crowis the leaser of five and the pumber of approved seals installed.

Children under the age of two years carried in the arms of passengers may be left out of this count.

EXTERNAL FREIGHT CARRIAGE

For those types of load which may cause significant changes in the Hight observation from those which have been demonstrated providually as being untiliantering providually as being untiliantering in order to determine the conditions within which such loads may be carried astely.

Such flight checks, which should take place in an anvironment from from third party bazard, are required to ensure that the topowing manauvers can be performed satisfy.

The picking up of external load.

Hover turns to ensure that adequate directional control is available.

Acceleration from hover.

Level flight and turns at an airopsed not leas than their required during the proposed operation.

Return to hover.

NOTE

The load shall be suspended in such a manner that it will not foul the helicopter structure.

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NORMAL DRILLS

EXTERIOR INSPECTION

FIRE DET TEST switch (if fitted) - Test.

FUSELAGE — CENTER RIGHT Side

Fuel sump — With FUEL VALVE switch — OFF and BAT switch — On, drain sump than BAT switch — OFF,

ENGINE PRE-START CHECK

WARNING and CAUTION Lights - Test.



EMERGENCY AND MALFUNCTION DRILLS

WARNING LIGHT (RED) SEGMENTS

BAT switch — OFF. GEN switch — OFF. Execute a normal supprotectional descent and landing.

WARNING LIGHT FAULT AND REMEDY

FIRE (II Nited) Overismperatura condition in angina compartment. Proceed as follows:

> Throttle — Close. Immediately enter suterolation. FUEL YALVE switch — OFF.

NOTE

Do not restart engine until cause of file has been determined and corrected. ~

Section 4

PERFORMANCE

TAKEOFF DISTANCE OVER 100 FOOT OBSTACLE

This chart provides takeoff performance date. The engine power limit for takeoff is hover power required, 2.0 foot (0.6 meters) skid height, plus 20% torque or power available as limited by engine topping. whicheves is less. The engine power limitations are imposed to proclude unsels. nose down ellittide while in the liight oath required to remain clear of critical height velocity limitations. Good phot technique is required to achieve the published takeoff performence; wind factors are not considered. The takeoff should be initiated from a stabilized 2.0 local (0.5 maters) skid height hover; increase power smoothly and simultaneously start nose down pitch rolation so that the helicopter accelerates along a flight path within the takeoff corridor dulined by the Height-Velocity diegram.

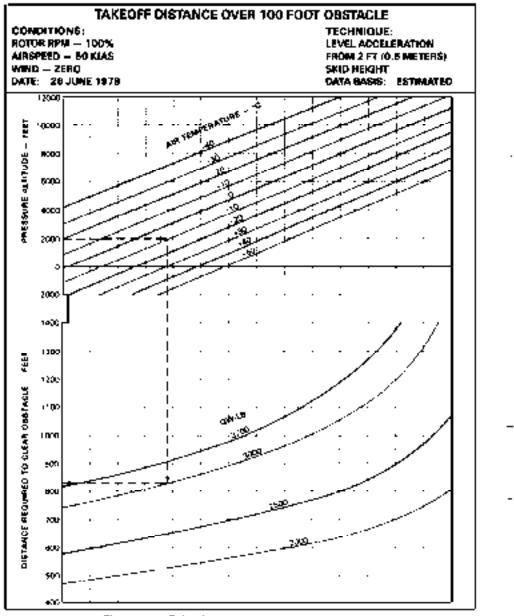


WHEN OPERATING NEAR THE ENGINE TOPPING LIMIT, THE N2 RPM MUST BE CLOSELY Monitored to preclude Droop Below The Normal Operating Limit,

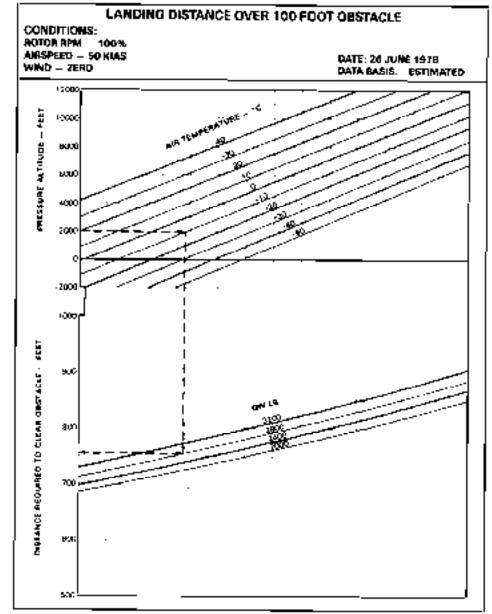
NOTE

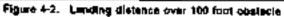
Power should be applied as a rate sufficient to expedite the meneuwer but not so rapid as to overshoot the torque value (approximately 6 accords). Once power is set, it should not be forther adjusted until obstacle classance is achieved.

As the helicopter approaches the append of 50 KIAS, start noss up rotation to achieve a 50 KIAS climb.









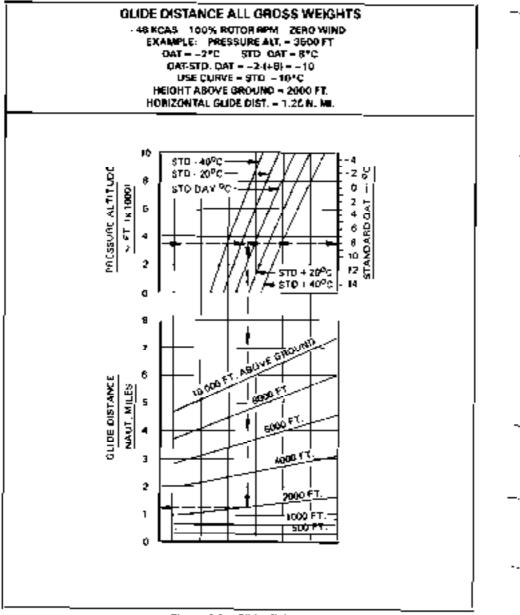


Figure 4-3. Glide distance

BHT-206B3-FM\$-30



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ROTORCRAFT FLIGHT MANUAL

SUPPLEMENT

ENGINE FIRE DETECTION SYSTEM 206-899-945

CERTIFIED SEPTEMBER 19, 1988

This supplement shall be attached to Model 20683 Flight Manual when Engine Fire Detection System. Kit has been installed.

Information contained herein supplements information of basic Flight Manuel. For Limitations, Procedures, and Performance Data not contained in this supplement, consult basic Filght Manual.

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ROTORCRAFT CERTIFICATION OFFICE FEDERAL AWATION ADMINISTRATION FT. WORTH, TX 76193-0170

NOTE

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GENERAL INFORMATION

The Engine Fire Detection System (205-898-945) will provide the pliot with a fire warning indicator which will illuminate in the supplied of an overleamperature condition in the angine compartment.



LIMITATIONS

WEIGHT LIMITATIONS

Actual weight change shall be determined ofter kil is installed and ballast readjusted, if necessary, to return empty weight CG to within ellowable limits.



NORMAL PROCEDURES

ENGINE PRE-START CHECK

Werning and Caution lights - Test.

FIRE DET TEST swiich — Press, FIRE light Illuminated; raisuas, FIRE light Extinguished.

Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

WARNING LIGHT (RED) SEGMENTS

WARNING LIGHT

FAGLE AND REMEDY

Overtamperatura condition in engine compariment. Proceed as follows: Throttle — Close. Immediately enter autorotation, PUEL VALVE switch — OFF. BAT awitch — OFF. GEN switch — OFF. Execute a normal subcordational descent and lending.

NOTE

Do not restant engine until cause of lice has been determined and corrected.



PERFORMANCE

No change from basic manual.

BHT-206B3-FMS-CAN-31



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# ROTORCRAFT FLIGHT MANUAL

# SUPPLEMENT

# EXTERNAL HOIST AND CARGO HOOK CANADIAN ADDENDUM

#### CERTIFIED BY FAA FOR DOT FEBRUARY 13, 1992

This supplement shall be attached to Model 20683 Fitght Manual when Externet Holet and Cargo Hook. All has been unstalled.

Information contained harein supplements information of basic Filght Manual. For Limitations, Procedures, and Performance Oxfa not contained in this supplement, consult basic Filght Manual.

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This document provides information supplementing or superseding that in the basic document to which it applies.

This page applies to Canadian Registered helicoplate only.

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ROTORCRAFT CERTIFICATION OFFICE FEDERAL AVIATION ADMINISTRATION FT. WORTH, TX 76153-0170

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# Section 1

# LIMITATIONS

# **CREW LIMITATIONS**

No person that be carried during external . • targo operations unless that person is:

- 1. A crewmember;
- 2. A crewmember (reinee; or

3. Performe a function essential to the operation.

## HEIGHT-VELOCITY LIMITATIONS

The height-velocity diagram in the basic manual is not a limitation for external load operation.

This page applies to Canadian Registered helicopters only.

BHT-206B3-FMS-32



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# ROTORCRAFT FLIGHT MANUAL

# SUPPLEMENT

# POP-OUT FLOATS WITH GENERATOR FAIL CAUTION LIGHT

# 206-706-211

#### CERTIFIED JANUARY 15, 1993

Information contained herein supplements information of basic Flight Manuel. For Limitations. Procedures, and Performance Data not contained in this supplement, consult basic Flight Manual.

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Gary Bloach Im Manager

ROTORCRAFT CERTIFICATION OFFICE FEDERAL AVIATION ADMINISTRATION FT. WORTH, TX 76193-0170

# GENERAL INFORMATION

Pop-out float kit (200-706-211) consists of high shid gear, floats attached to main skid panels, initiation system, position lights, and ettaching handware. This kit provides an electrically operated solenoid valve installed on the reservoir. A GEN FAX caution light is foosted in caution panel to slevt pilot generator has failed and battery power might be insufficient to inflate floats. Float infailed time is approximately 5 seconds.

# Section 1

## LIMITATIONS

.

## TYPE OF OPERATION

Over water flight is prohibited if generator is inoperative.

Operation with pop-out floats initiated is limited to a flight to a servicing facility for repacking and recharging system.

Floats and covers shall be installed and ground handling wheels removed for all flight operations.

Accomplish float system profilight check daily prior to performing over water operations.

Flight operations requiring use of external holds are prohibited. System shall be descrivated when floats are installed unless cable guard XII (205-705-214) is installed.

If cable guard hill is installed, holst onble and hook shall be slowed prior to float inflation.

#### \_\_\_\_ AIRSPEED

Doors on or off in any combination — Same as basic helicopter.

Floats stowed, covers insighted — Some as basic helicopter.

Maximum Inflation alrepsed — 60 MPH (52) KNOTS) IA6.

#### NOTE

During infinition cycle, undesirable pitching will occur at strapeeds above 60 MPH (52 KNOTS) IAS.

Maximum allowable alrepsed, lipata Inflated — 60 MPH (69 KNOTS) IAS.

Maximum sutorotation sinspeed, (lostsinfinited - 70 MPH (60 KNOTS) IAS

# RATE OF CLIMB

Maximum rate of climb with lights slowed. — Same as basic manual.

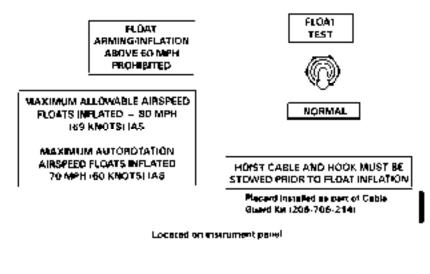
#### WEIGHT/CENTER OF GRAVITY

Actual weight change shall be determined after KR is installed and ballast medjuated, if necassary, to return empty weight to within allowable limits. Refer to Center of Cravity on Weight Empty Chart in BHT-20683-MM-1.

## PLACARDS AND DECALS

Refer to figure 1-1.

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Located on collective control head





# NORMAL PROCEDURES

#### EXTERIOR CHECK

#### NOTE

Ensure cable guerd kit (206-706-214) le installed if external hoiet operations are to be conducted.

- 1. Floats Stowed.
- Proumable (Inpu Condition and security.
- Flost covers Clean and secured.
- Float initiation cylinder Proper temperature and attitude vs initiation pressure. Refer to placard on cylinder. Electrical connector for security.

#### INTERIOR CHECK

 BAT switch BAT. With GEN avrich OFF, varify GEN FAIL light lituminates.

#### NOTE

If GEN FALL light does not Huminete, flight over water is prohibited.

- FLOAT ARM switch Off, guard ologed.
- 3. FLOAT POWER circuit breaker -- In.
- FLOAT TEST and FLOAT ARM lights - Press to lest.
- FLOAT TEST awitch FLOAT TEST position and hold.
- 8 FLOAT INFLATION worken Press. FLOAT TEST light illuminates, release switch.
- FLOAT TEST switch NORMAL, FLOAT TEST light ontinguishes.
- FLOAT ARM switch -- On (guard open), FLOAT ARM light illuminates,

then switch off (guard closed). FLOAT ARM light extinguishes.

BAT switch — OFF.

#### OVER WATER OPERATIONS

- FLOAT ARM switch On (guard open).
- FLOAT ARM light illumineted.

#### NOTE

During flight at altitudes above 500 feet and at airspeeds of 60 MPH (52 KNOTS) IA6 and above, system should be descrived by positioning FLOAT ARM switch to off (guard closed).

3. Rearm system prior to landing.

#### OVER LAND OPERATION

FLOAT ARM ewitch — Off (guard closed).

#### DESCENT AND LANDING -FLOATS STOWED



IF CG IS AFT OF STATION 112.7, PRACTICE AUTOROTATIONAL TOUCHDOWNS SHOULD BE AVOIDED OUE TO NOSE DOWN PITCHING. RUN-OH LANDING ON OTHER THAN A MARD, FIRM SUAFACE SHOULD BE EXERCISED WITH CAUTION.

#### NOTE

Tail-low, run-on landings should be evolved to prevent non-edown pitching. 

# Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

#### WARNING AND CAUTION LIGHTS



Table 3-1 presents fault conditions and corrective actions for centron lights.

IF GEN FAIL LIGHT (LLUMINATES, BATTERY POWER MAY NOT BE OF SUFFICIENT STRENGTH TO INFLATE FLOATS.

Table 3-1. Caution lights

| WORDING   | FAULT CONDITION                               | CORRECTIVE ACTION                                                                                                                                                                                           |
|-----------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FLOAT ARM | FLOAT ARM switch in on position (guard open). | Verify switch position                                                                                                                                                                                      |
| GEN FAIL  | Generalor has failed.                         | Over land; GEN switch — RESET,<br>then GEN. If light remains<br>(Nominated, GEN switch — OFF.<br>Land as soon as practical.                                                                                 |
|           |                                               | Over water: GEN switch RESET,<br>then GEN. If tight remains<br>lituminated, GEN switch — OFF.<br>Turn off all nonessential electrical<br>equipment to conserve battery<br>power. Land as soon as practical. |

#### EMERGENCY WATER LANDING

FLOAT ARM light — Illuminated.

- Arrapsed Reduce below maximum initiation simpsed (60 MPH (52 KNOTS) (A6).
- Autorotation or low power descent — Establish at 500 feat per minute.
- FLOAT ARM switch On (guard open).



DO NOT INFLATE FLOATS MORE THAN 2000 FEET ABOVE ANTICIPATED LANDING SURFACE.

#### FAA APPROVED

5. FLOAT INFLATION switch - Press.

#### NOTE

During flight with floats inflated, e random bumping of skid gear crosstube egainst landing gear addies will occur. Reducing strepsed will reduce bumping.

### AFTER EMERGENCY WATER LANDING

After tanding, inspect belicopier for possible demage. If mallunction was cause of lending, correct meitunction.

if no damage has occurred to belicopter and mellionation has been corrected, helicopter can be terried to nearest maintenance facility to repack floats and charge system. Perrying sirepact is restricted to 80 MPH (69 KNOTS) 149. Maximum rate of climb while ferrying is 1000 fact per minute.

# Section 4

# PERFORMANCE

#### HOVER CEILING - FLOATS STOWED

Out of ground effect haver performance is serve as basic helicopter. For in ground effect haver performance, refer to figure 4-1.

#### NOTE

Mover celling charls presented in this supplement reflect

periormance with 65 knch diameter tail rotor (P/N 208-016-201) Installed. For performance with 62 inch diameter tell rotor (P/ M 206-010-750), refer to BHT-20683-FMS-22,

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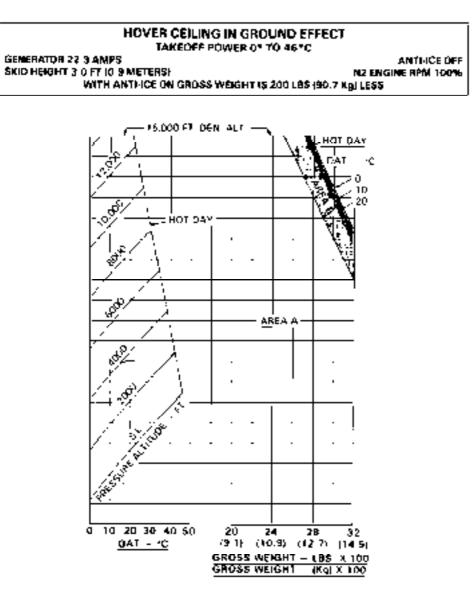


Figure 4-1 Hover ceiling - in ground effect (Sheet 1 of 2)

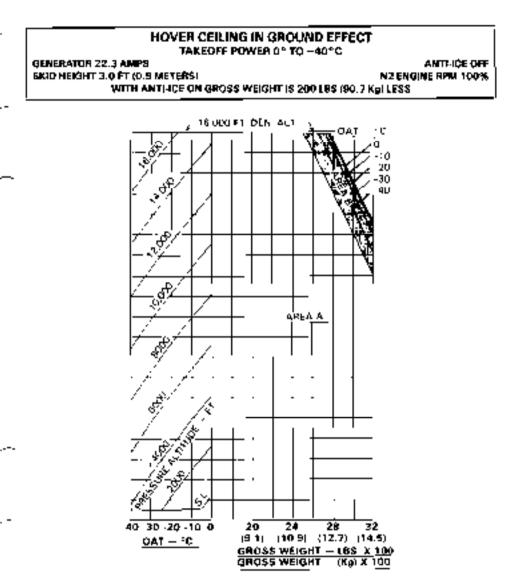


Figure 4-1. Hover ceiling - in ground effect (Sheet 2 of 2)



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# ROTORCRAFT FLIGHT MANUAL

# SUPPLEMENT TH-67 CONFIGURATION FUEL SYSTEM AND TORQUE INDICATOR BHT SN 5101 THROUGH 5400 CERTIFIED 5 OCTOBER 1993

This supplement shall be attached to Model 2068 JelRanger III Flight Manuel when the following equipment has been installed:

206-350-504 Fuel Cell 206-075-740 Fuel Quantity Gage 206-076-676 Fuel Pressure Gage 205-075-739 Torque Indicator

Information contained herein supplements information of basic Flight Manuel, For Limitations, Procedures, and Performance Data not contained in this supplement, consult basic Flight Manuel.

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REISSUE — 3 SEPTEMBER 1997

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| Release  | <br>September 1997 |

#### NOTICE

This publication is being reissued in its entirety for administrative reason to extend scrial number effectivity to 5400

REISSUE - 3 SEPTEMBER 1997

# Section 1

# LIMITATIONS

### 1-1. INTRODUCTIONWEIGHT AND CENTER OF GRAVITY

Actual weight change shall be determined after helicopter has been properly configured and ballast adjusted, if necessary, to maintain og within limite of the Groes Weight Center of Gravity chart.

#### NOTE

The Weight Empty Center of Gravity chart in Malatenance Manual BHT-20683-MM-1 does not apply to this helioppiar configuration.

### 1-2. <u>BASIS OF CERTIFICA-</u> <u>TIONTRANSMISSION AND TAIL</u> <u>ROTOR GEARBOX OIL</u>

Oil conforming to Mit-1-7808 (NATO O-148) shell be used at emblent temperatures below -40°C (-40°F).

Oil conforming to DOD-L-05734 shall be used at embient temperatures of -40°C (-40°F) and above.

#### 1-3. <u>TYPES OF</u> OPERATIONINSTRUMENT MARKINGS

Refer to Ngure 1-1.

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Refer to basic approved flight manual for limitations and explanation of markings.



Torque indicator has extended overtorque scale to 130%.

Red triangle on fuel pressure gage may be located in either position shown.

#### Figure 1-1. Instrument markings

2



# NORMAL PROCEDURES

No change from basic manual.



# EMERGENCY/MALFUNCTION PROCEDURES

# 3-1. INTRODUCTIONCAUTION LIGHT (AMBER) SEGMENTS

ÇAUTION LIGHT FAULT AND REMEDY

FUEL Approximately 12 LOW gallons of fuel remaining. Verily fuel quantity. Land as seen as practical.

# Section 4

# PERFORMANCE

No change from basic menual.



## SYSTEMS DESCRIPTION

#### 1-1. WEIGHT EMPTY CENTER OF GRAVITY

#### NOTE

The Weight Emply Center of Gravily chart in Maintenance Manual BMT-20683-MMA1 does not apply to this helicopter configuration.

#### 1-2. GROSS WEIGHT CENTER OF GRAVITY

It shall be the responsibility of the pilot to ensure that the helicopter is properly toaded so that the entire flight is conducted within the limits of the Gross Weight Center of Gravity chart (BHT-20683-FM-1).

#### 1-3. FUEL LOADING

Fuel system capacities are as follows:

Total fuel: 84.1 U. S. gallons Usable fuel: 82,6 U. S. gallons

The helicopter center of grovity will move forward as just is consumed.

The Fuel Londing Table (table 1-1) provides weight, moment, and center of gravity data for usable fuel abound the helicopter. Weight and moment for fuel consumed must be computed as follows:

|                                         |                | MOMENT         |
|-----------------------------------------|----------------|----------------|
| Fuel at takeoff<br>Less fuel at landing | 681.7<br>-58.0 | 65842<br>-7559 |
| Fuel consumed                           | 493.7          | 59253          |

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|                 |                | LONG       | TUDINAL           | LEFT LATERAL |                   |  |
|-----------------|----------------|------------|-------------------|--------------|-------------------|--|
| U.S.<br>GALLONS | WÊ1QHT<br>(LB) | CG<br>(1N) | MOMENT<br>(IN-LB) | ÇG<br>(IN)   | MOMEN)<br>(IN*L8) |  |
| 5               | 34.0           | 111,20     | 3781              | -2.95        | -100              |  |
| 10              | 68.Q           | 111.60     | 7689              | -2.00        | -180              |  |
| 15              | 102.0          | 111,75     | 11309             | -2.90        | -296              |  |
| 20              | 135.0          | 111.85     | 15212             | -0.00        | -408              |  |
| 25              | 170.0          | 111.95     | 19032             | -3,10        | -527              |  |
| 30              | 204.0          | 112.50     | 22950             | -3.ZÛ        | -653              |  |
| 35              | 236.0          | 113.75     | 27073             | -2.85        | -679              |  |
| 40              | 272.0          | 114,75     | 31212             | -2.50        | -680              |  |
| 45              | 306.0          | 115.60     | 35374             | -2.20        | -673              |  |
| 50              | 340.0          | 116,30     | 39542             | -2.00        | -680              |  |
| 55              | 374.0          | 116.90     | 43721             | -1-80        | -679              |  |
| 60              | 408.0          | 117.35     | 47879             | -1.66        | -673              |  |
| 65              | 442.0          | 117.00     | 52086             | -1.50        | -663              |  |
| 70              | 476.0          | 118,20     | 56263             | -1.40        | -666              |  |
| 75              | 510.0          | 118.60     | 60435             | -1.30        | -663              |  |
| 80              | 544.0          | 118.60     | 64627             | -1_26        | -690              |  |
| 32,6            | \$51.7         | 119.00     | 56 <b>9</b> 42    | -1.20        | -674              |  |

| Table | 1-1. | Fuel | loeding | table |
|-------|------|------|---------|-------|
|       |      |      |         |       |

#### TYPE B OR JP-4 (6.5 L8/GAL)

|                 |                | LONG       | TUDINAL           | LEFTL      | LEFT LATERAL      |  |
|-----------------|----------------|------------|-------------------|------------|-------------------|--|
| U.S.<br>GALLONS | WENCHT<br>(LB) | CQ<br>(IN) | MOMENT<br>(IN-L8) | CG<br>(IN) | MOMENT<br>(IN-LB) |  |
| 5               | 32.5           | 141.20     | 3614              | -2.95      | -96               |  |
| 10              | 65.0           | 111.60     | 725-              | -2.80      | -182              |  |
| 15              | 97.5           | 171.76     | 10898             | -2.90      | -283              |  |
| 20              | 130.0          | 111,85     | 14541             | -3.00      | -390              |  |
| 25              | 162.5          | (T1.96     | 16192             | -3.10      | -504              |  |
| 30              | 195 0          | 112,50     | 21938             | -3.20      | -624              |  |
| 35              | 227 5          | 113.76     | 26678             | -2.85      | -648              |  |
| 40              | 260.0          | 114.75     | 29835             | -2.50      | -650              |  |
| 45              | 292.5          | 115.60     | 23813             | -2.20      | -644              |  |
| 50              | 025.0          | 116,30     | 37798             | -2.00      | -650              |  |
| 55              | 357.5          | 115.90     | 41792             | -1,60      | -644              |  |
| 60              | 0.020          | 117.35     | 45767             | -1.65      | -644              |  |
| 65              | 422.5          | 117 80     | 49773             | -7.50      | -634              |  |
| 70              | 456.D          | 118.20     | 53781             | -1.40      | -637              |  |
| 75              | 487.5          | 118 50     | 57769             | -3.30      | -634              |  |
| BQ              | 52D.D          | 118.80     | 61776             | -1.25      | -650              |  |
| 82.6            | 536.9          | 118 00     | 63894             | -1.20      | -644              |  |

NOTE: Data above represents usable fuel on board based on nominal densities at 16°C (59°F).

CARLE LD. FIGHER

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BHT-206B3-FMS-34



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# ROTORCRAFT FLIGHT MANUAL

# SUPPLEMENT

# INCREASED INTERNAL GROSS WEIGHT

# STC NO. SH8923SW BHT SN 4300 ONLY

#### CERTIFIED 23 JUNE 1994

This supplement shall be attached to the Model 2068 Jetranger III Flight Manual for belicoptor sorial number 4300 to permit operation at internal gross weights up to 3360 pounds in accordance with Supplemental Type Certificate.

Information contained herein supplements information of besic Flight Manuel. For Limitations. Procedures, and Performance Data not contained in this supplement, consult basic Flight Manual.

ОСНУЧИСНІ НО ВІЗ ПОРИДСИГ ІОН ОСЦІ АНТОСОРТОВІ ПОЛ ИДІ ВЕЦ НЕОСОРТОВІ ПОЛІДИНІ ПО АЦІ ВИСИ ОЧНІВ ПОСТАКО А ПИРАСИ ОЧНІВ ПОСТАКО



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ROTORCRAFT CERTIFICATION OFFICE FEDERAL AVIATION ADMINISTRATION FT. WORTH, TX 76193-0170



# LIMITATIONS

#### AIRSPEED LIMITATIONS

V<sub>NF</sub> 78 KIAS (91 MPH) for gross weights above 3200 pounds (1451.5 kilograms).

# WEIGHT LIMITATIONS

Maximum internal gross weight for takeoff and tanding is 3350 pounda (1519.5 kliograms).

(No external gross weight above 3350 pounds is approved.)

#### ALTITUDE LIMITATIONS

Above 3200 pounds grass weight, the maximum pressure altitude is 5000 leet.

#### LONGITUDINAL CENTER OF GRAVITY LIMITS

Refer to Center of Gravity vs Grose Weight chart (figure 1-1).

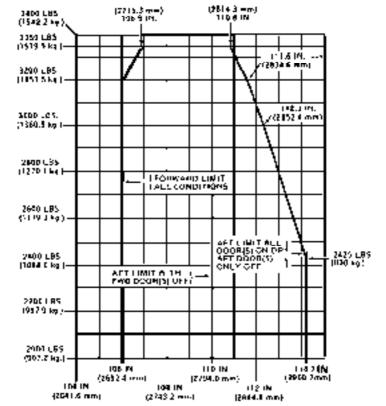
#### LATERAL CENTER OF GRAVITY LIMITS

Lateral CG limits are -1.0 inch left and +2.0 inches right at any approved longitudinal center of gravity for gross weights above 3200 pounds.

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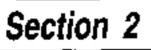
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CHOICE ALIGNE



# NORMAL PROCEDURES

No change from basic manual.

# Section 3

EMERGENCY AND MALFUNCTION PROCEDURES

No change from basic metwel.

# Section 4

# PERFORMANCE

#### — OPERATION IN ALLOWABLE RELATIVE WIND

For hover operation at grows weights shows 3200 pounds:

IGE manouvers — Refer to basic flight manual.

OGE menuevers - Celm wind only.

#### HOVER CEILING

Refer to ligures 4-1 and 4-2.

#### HEIGHT-VELOCITY DIAGRAM

Refer to figure 4-3.

#### ALTITUDE VS GROSS WEIGHT LIMIT FOR REIGHT-VELOCITY DIAGRAM

Constity attitude limit for Height-Velocity Diagram is 2500 feet at gross weights of 3200 to 3350 pounds (1451.5 to 1519.5 kilograms).

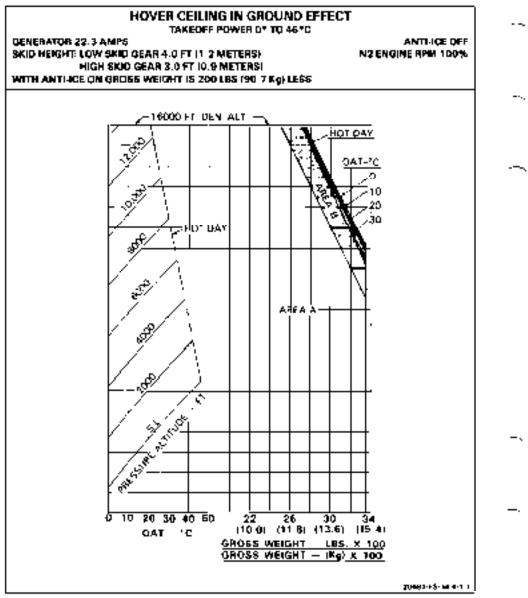


Figure 4-1. Nover ceiling in ground effect (Sheet 1 of 2)

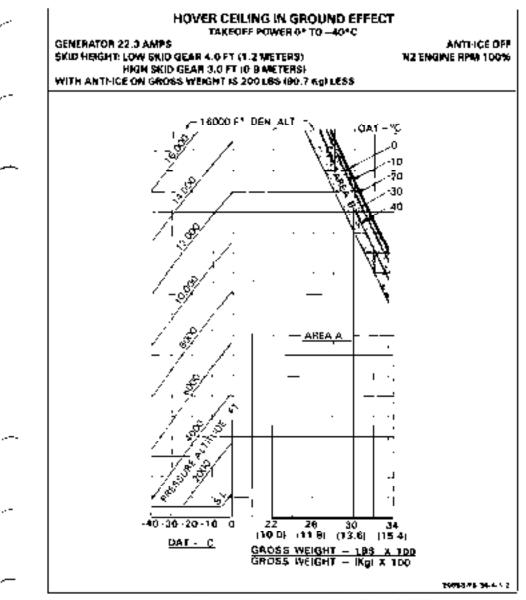


Figure 4-1. Hover celling in ground effect (Sheet 2 of 2)

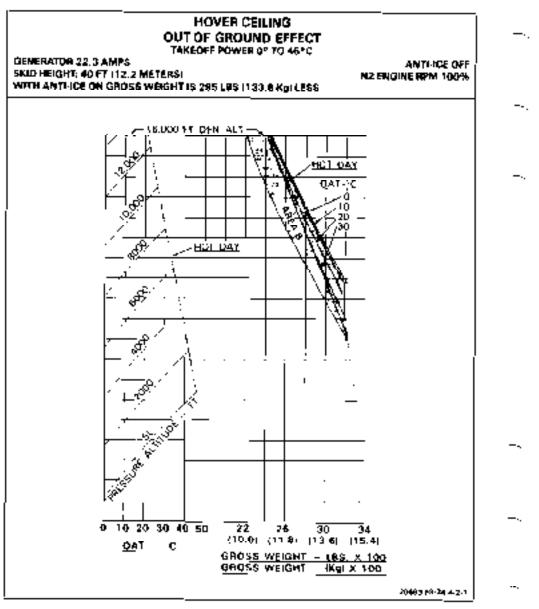


Figure 4-2. Hover celling out of ground effect (Sheet 1 of 2).

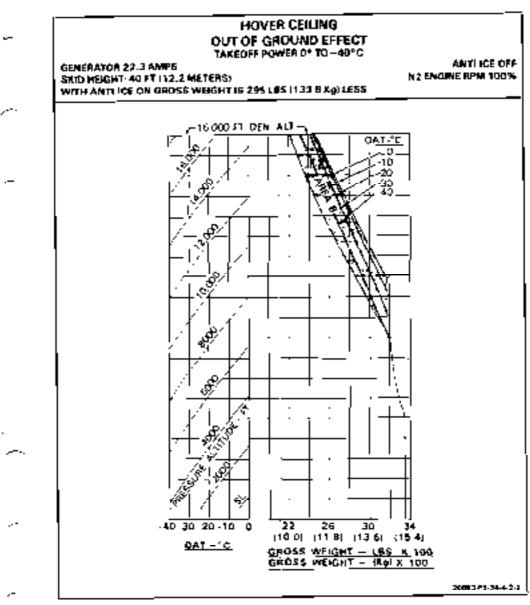
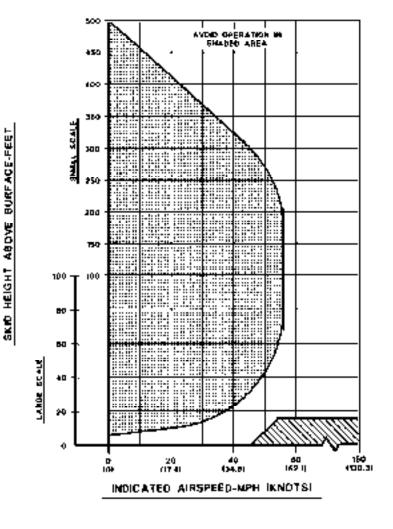


Figure 4-2. Hover ceiling out of ground effect (Sheet 2 of 2)

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HEIGHT-VELOCITY DIAGRAM FOR SMOOTH, LEVEL, FIRM SURFACES.

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Figure 4-3. Height-velocity diagram



# ROTORCRAFT FLIGHT MANUAL

# SUPPLEMENT HOT WEATHER OPERATIONS

#### 206-706-514

#### CERTIFIED 7 AUGUST 1996

This supplement shall be attached to the Model 20683 Flight Manual when the 206-706-514 Mat Westher Operations kit has been installed.

Information contained herein supplements information of basic Flight Manual. For Limitations, Procedures, and Performance Data not contained in this supplement, consult basic Flight Manual.

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### LIMITATIONS

#### AIRSPEED

Atrapand Nimitation placerds, Figure 1-1, provide alrepeed limits for emblent temperatures from e52 °C to -40 °C and pressure elitudes from sea level to 20,000 ft. decreases with alighde at standard lapse role (2 °C per 1000 feet Hy).

PLACARDS

Rater to Figure 1-1.

#### **AMBIENT TEMPERATURE**

Maximum embient air temperature for operation is 52 °C (125 °F) at sea level and

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| 2010 449 (1011 449) 448 |                       |                              |     |     |       |     |      |  |  |  |
|-------------------------|-----------------------|------------------------------|-----|-----|-------|-----|------|--|--|--|
|                         | JOOL LE OW AND BILLOW |                              |     |     |       |     |      |  |  |  |
| ۴P                      | 0 TAO                 |                              |     |     |       |     |      |  |  |  |
| 1003 57                 | 32                    | 52 44 44 <u>54</u> 0 .30 -80 |     |     |       |     |      |  |  |  |
| D                       | 115                   | 144                          | 170 | 154 | 01°1  | 150 | 150  |  |  |  |
| ż                       | 120                   | 13 P                         | 141 | 150 | 150   | 150 | 150  |  |  |  |
| •                       | 126                   | 191                          | 131 | 140 | 10    | -50 | 160  |  |  |  |
| 6                       | 116                   | 110                          | 122 | 1,# | 1 A Q | -14 | 160  |  |  |  |
| ٠                       |                       | 1.00                         | גיו | 121 | סכו   | •+0 | 160  |  |  |  |
| 1 <b>0</b>              |                       | 140                          | 143 | 161 | 120   | 141 | 140- |  |  |  |
| ۶Ľ                      |                       | м                            | 17  | 101 | 110   | 120 | 120  |  |  |  |
| 14                      |                       |                              | μi  | Ħ   | 1.60  | 110 | 190  |  |  |  |
| 15                      |                       |                              |     |     | ю     | 100 | 110  |  |  |  |
| · ••                    |                       |                              |     |     |       | *   | 1¢¢  |  |  |  |
| 30                      |                       |                              |     |     |       |     |      |  |  |  |

| 100 VE 3010 VE 0W |          |     |     |            |     |            |     |  |
|-------------------|----------|-----|-----|------------|-----|------------|-----|--|
| H <sub>a</sub>    | GAT — "C |     |     |            |     |            |     |  |
| 1008 FT           | 12       | -   | 40  | 30         | a   | -24        |     |  |
| a                 | 132      | 1   | -40 | 140        | 140 | 144        | 144 |  |
| 1                 | •12      | 117 | -12 | -44        | -44 | 14         | 145 |  |
| •                 | •        | PI  | 103 | 120        | 139 | 140        | 140 |  |
| 4                 | ખ        | 2   | *   | 101        | 119 | 180        | 14  |  |
| ŀ                 |          | 53  | 85  | <b>b</b> i | 3   | 115        | 148 |  |
| 10                |          |     |     | 61         | 8   | <b>9</b> F | 175 |  |
| 13                |          |     |     |            | ¥   | 70         | 149 |  |
| 14                |          |     |     |            |     | 10         | *   |  |
| 1.                |          |     |     |            |     |            | 58  |  |
|                   |          |     |     |            |     |            |     |  |

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#### Figure 1-1. Airspeed limitation placard (Sheet 1 of 3)

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a = 1

| 2000 A/S LINIT KINGTE — 145 |                       |                       |     |               |     |     |       |  |  |
|-----------------------------|-----------------------|-----------------------|-----|---------------|-----|-----|-------|--|--|
|                             | 2004 LB GHT NHO BELOW |                       |     |               |     |     |       |  |  |
| Pip.                        | 04TC                  |                       |     |               |     |     |       |  |  |
| 4000 FT                     | 52                    | 52 46 48 20 0 -20 -84 |     |               |     |     |       |  |  |
| a.                          | <b>736</b>            | 126                   | 130 | 190           | 120 | 138 | 134   |  |  |
| 1                           | 617                   | 131                   | 133 | 6 <b>\$</b> 0 | 134 | 1#  | 1,80  |  |  |
|                             | 114                   | 182                   | 118 | 111           | 194 | 150 | 130   |  |  |
| •                           | -101                  | 140                   | 196 | 412           | 123 | 130 | 190   |  |  |
| •                           |                       | *                     | 5   | 104           | 193 | 121 | φc i  |  |  |
| 14                          |                       | PT                    | ю   |               | 104 | 142 | 122   |  |  |
| 13                          |                       | 74                    | ¢١. | 6A            | **  | 144 | )     |  |  |
| 14                          |                       |                       | 14  | Ħ             | 47  | Ħ   | a Ant |  |  |
| 14                          |                       |                       |     |               | 78  | 11  | н     |  |  |
| нғ                          |                       |                       |     |               |     | 70  | NT .  |  |  |
| *                           |                       |                       |     |               |     |     | л     |  |  |

| ABOVE 1005 UP OW       |     |          |     |     |     |     |            |  |  |
|------------------------|-----|----------|-----|-----|-----|-----|------------|--|--|
| Hay                    |     | DAT — "G |     |     |     |     |            |  |  |
| 1008 FT                | 62  | -44      | -   | 30  | 4   | -10 | -10        |  |  |
| 0                      | 146 | 144      | 121 | 122 | צי  | 122 | 122        |  |  |
| à                      | 17  | 102      | 104 | +32 | ਾਸ  | 41  | 1122       |  |  |
| 4                      | ы   | Ŀ        | н   |     | 122 | 123 | 123        |  |  |
| +                      | *   | 4        | 73  | HÌ  | 배   | 12. | 121        |  |  |
| ÷                      |     | ч        | H.  | 20  |     | 104 | 124        |  |  |
| 10                     |     |          |     | ы   | •   | *   | 104        |  |  |
| בו                     |     |          |     |     | 63  | -   | 47         |  |  |
| 14                     |     |          |     |     |     | 51  | H          |  |  |
| 14                     |     |          |     |     |     |     | <b>#</b> 1 |  |  |
| (Teneral to be seened) |     |          |     |     |     |     |            |  |  |

Figure 1-1. Airepeed limitation placetd (Sheet 2 of 3)

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| 2060 14 -LINI1 kw376 - 141 |            |                               |         |              |     |      |     |  |  |
|----------------------------|------------|-------------------------------|---------|--------------|-----|------|-----|--|--|
| 3030 LE DIE LHO GELOW      |            |                               |         |              |     |      |     |  |  |
| ۲۴                         | 047 — 'É   |                               |         |              |     |      |     |  |  |
| 1646<br>F1                 | <b>R</b> 2 | \$2 <b>48 40 24 0</b> -30 -40 |         |              |     |      |     |  |  |
| Þ                          | 15%        | 128                           | 180     | 739          | 140 | 138  | 138 |  |  |
| t                          | 711        | 121                           | 1 BŞ    | •#4          | 130 | 134  | 134 |  |  |
| ۰.                         | ţ,         | 113                           | 114     | 123          | 128 | 174  | נכו |  |  |
| •                          | ıй         | 103                           | 195     | •13          | ter | 134  | 130 |  |  |
| •                          |            | Ħ                             | 14<br>1 | • <b>9</b> 3 |     | 120  | 132 |  |  |
| ıd.                        |            | 87                            | ы       | ¥            | 184 | 113  | 123 |  |  |
| 18                         |            | 79                            |         | •            | ħ   | 194  | 11  |  |  |
| **                         |            |                               | ţŢ      | +0           | 11  | ¥    |     |  |  |
| 15                         |            |                               |         |              | 28  | 47   | ×   |  |  |
|                            |            |                               |         |              |     | 78   | 4P  |  |  |
| 19                         |            |                               |         |              |     |      | 78  |  |  |
|                            |            | OVE                           | 3960 L  | 8 GW         |     |      |     |  |  |
| tip.                       |            |                               | 0       | · _ 14       | -2  |      |     |  |  |
| i silo<br>Fit              | 52         | **                            | -       | **           | •   | -54  | -85 |  |  |
| ů.                         | 115        | 118                           | 123     | 132          | 122 | 122  | +22 |  |  |
| 2                          | 17         | •94                           | 104     | 127          | 440 | 112  | 122 |  |  |
| •                          | 40         | Ľ                             | 41      | 194          | 621 | 122  | 137 |  |  |
| •                          |            | <b>1</b>                      | п       |              | •++ | 'un  | 132 |  |  |
| ٠                          |            | 69                            | ,<br>ен | 70           | 16  | 1-69 | 133 |  |  |
| ¢۲                         |            |                               |         | 53           | н   | H    | •   |  |  |
| <b>د</b> ر                 |            |                               |         |              | 43  | - 40 | 47  |  |  |
| L.#                        |            |                               |         |              |     | 31   | 0   |  |  |
| <b>۲</b>                   |            |                               |         |              |     |      | 51  |  |  |
| 144648 1 B. 4414701        |            |                               |         |              |     |      |     |  |  |

Figure 1-1, Arepead limitation piacerd (Sheet 3 of 3)

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## NORMAL PROCEDURES

No change from basic menual.



## EMERGENCY AND MALFUNCTION PROCEDURES

No change from basic manual.

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# Section 4

#### PERFORMANCE

#### POWER CHECK PROCEDURES

The POWER CHECK CHART (Figure 4-1) Indicates the minimum percent torque that must be evaluable from an angine meeting the minimum Altison specification with basis angine inlet. The engine must develop these values in order to meet the performance data contained in this supplement.

A POWER CHECK CHART for behoppers with particle separator installed in provided (Figure 4-2).

Both POWER CHECK CHARTS are valid in hover, climb 52 KIAS (60 MPH) or level lifght with girspeeds between 60 and 100 KIAS (92 and 115 MPH).

#### RATE OF CLIMB

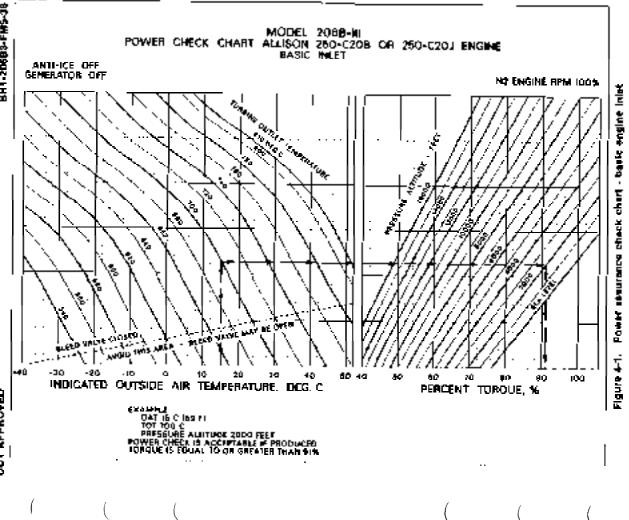
Figure 4-3 provides maximum rate of cRmb for gross weights from 2000 pounds to 3200 pounds using takeoff power with basic engine iniol. Date is provided for pressure sitiludes from sea level to 20,000 fast and temperatures from +52 °C to -40 °C. Figure 4-4 provides similar information for helicopters with particle separator installed.

Figure 4-5 provides maximum rate of climb using maximum continuous power for grass weights from 2000 to 3200 pounds for helicopters with basic engine inici. Deta is provided for pressure slittudes from sea level to 20,000 feet and temperatures from +52 °C to -40 °C. Figure 4-6 provides similar information for helicopters with particle separator installed.

#### HOVER CEILING

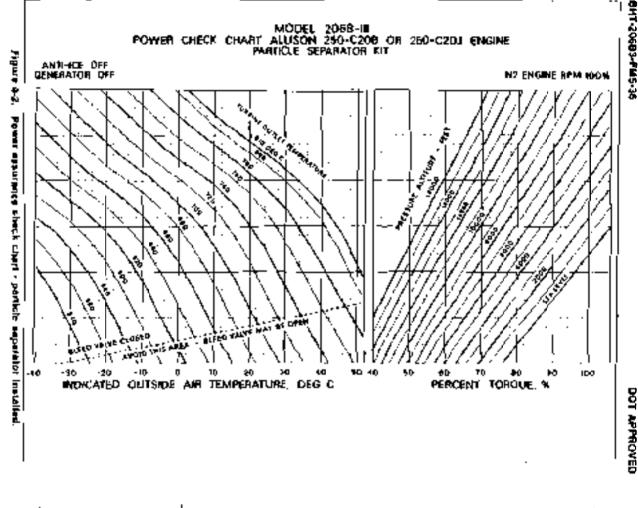
Figure 4-7 provides hover ceiling in ground stilled using takeoif power altemperatures from +52 °C to -40 °C. Data is provided for gross weights from 2200 to 3350 (using neil) pounds and pressure altitudes from -2000 feet to 16,000 feet for helicopters with basic engine inlet. Figure 4-8 provides similar information for helicopters with particle separator installed.

Figure 4-9 provides hover calling out of ground effect using takeoif power at temperatures from 452 °C to -40 °C. Data is provided for gross weights from 2200 is 3350 (actornal) pounds and pressure altitudes from -2000 rest to 16,000 fent for helicopters with basic engine intel. Figure 4-10 provides similar information for helicopters with particle separator instelled.



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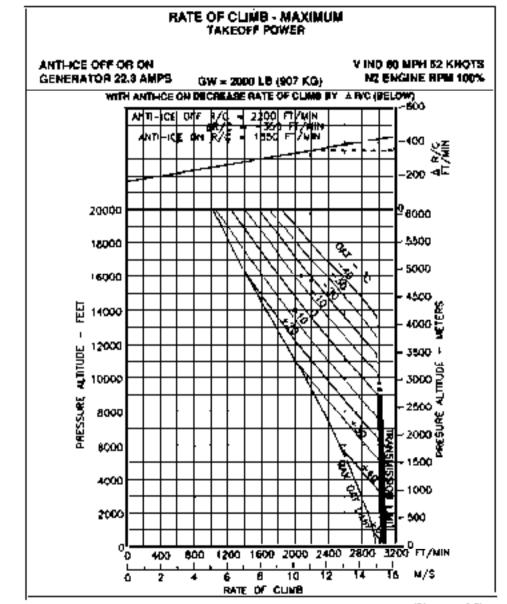
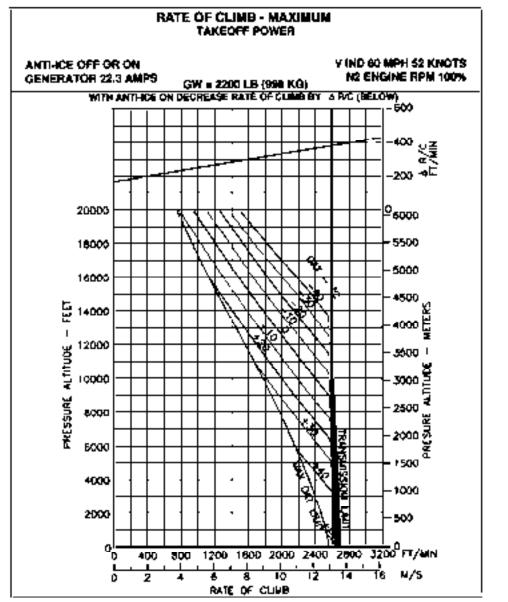


Figure 4-3. Rate of climb - Maximum - Takeoff power - basic engine (als) (Sheet ) of 7)

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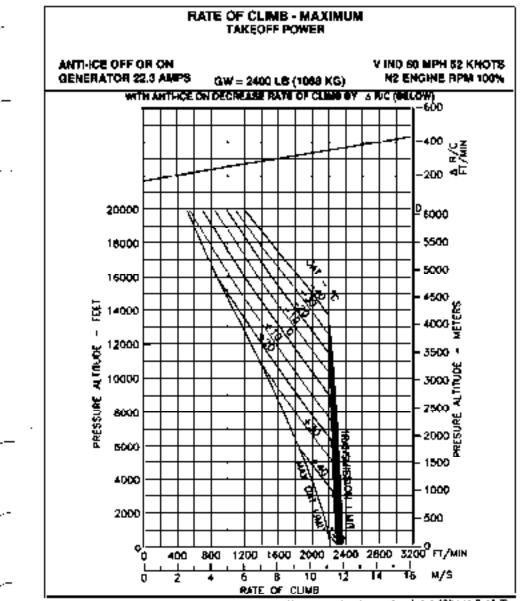


Figure 4-3. Rate of climb - Maximum - Takeoff power - basic ongine intel (Sheet 3 of 7)

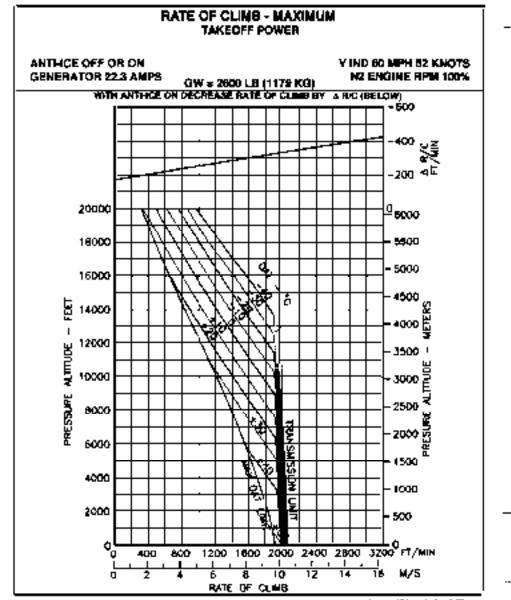


Figure 4-3. Rate of climb - Maximum - Teknoti power - basic engine inter (Sheet 4 of 7).

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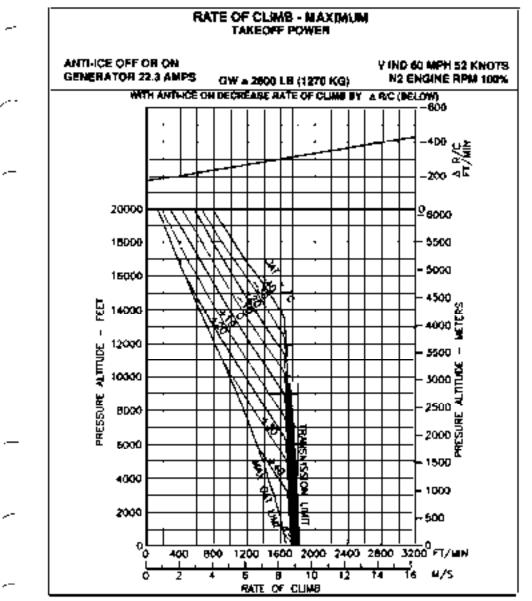


Figure 4-3. Rate of climb - Maximum - Takeoff power - basic ongine with (Shret 8 of 7)

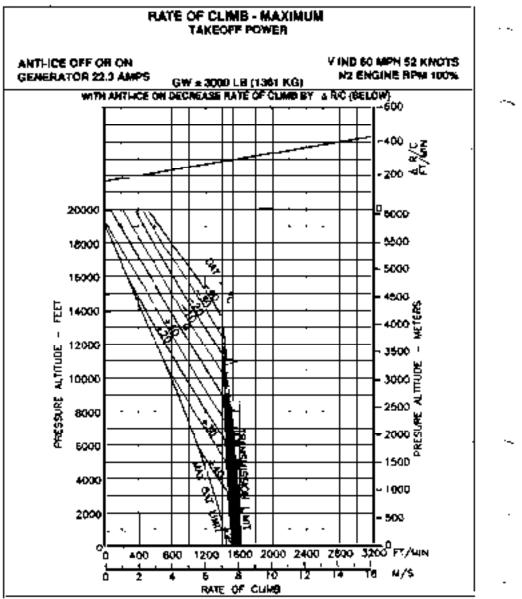


Figure 4-3. Rate of climb - Maximum - Tekeori power - basic engine intel (Shaet 5 of 7)

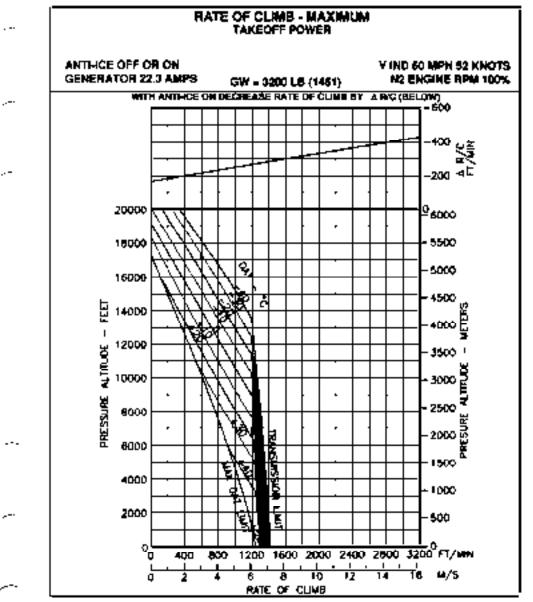


Figure 4-3. Rate of climb - Maximum - Takeo() power - basic engine intel (Sheet 7 of 7).

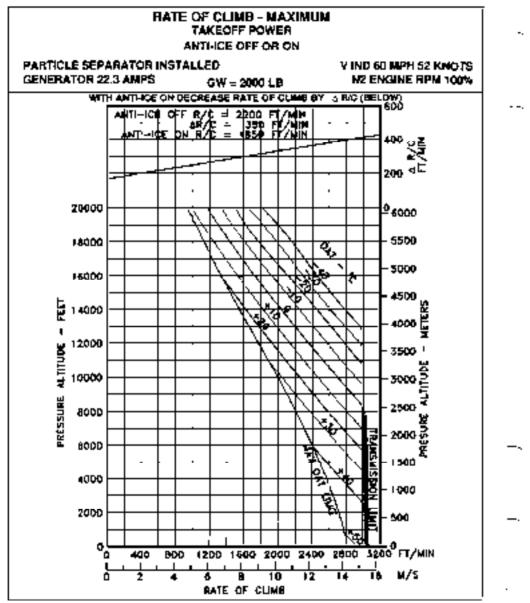


Figure 4-4. Rate of climb - Maximum - Takaofi power - particle separator installed (Shret 1 of 2)

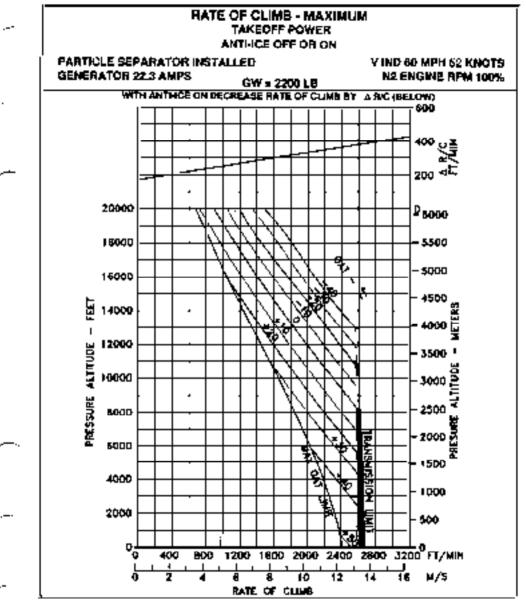


Figure 4-4. Rate of climb - Maximum - Takeoff power - particle separator installed (Sheet. 2 of 7)

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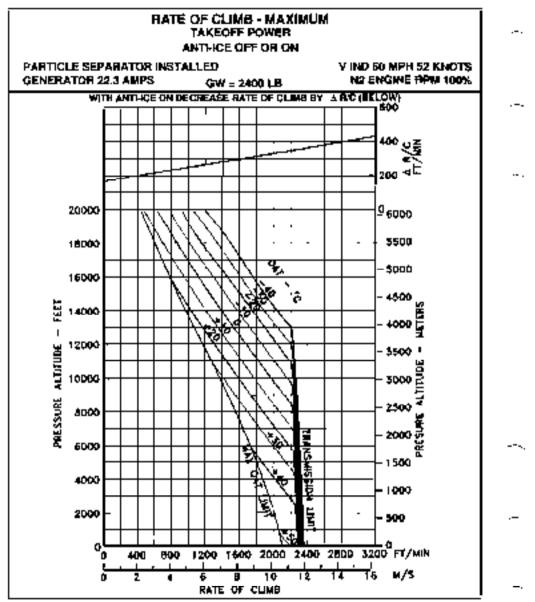


Figure 4-4. Role of climb - Maximum - Takeoff power - particle apparator installed (Sheet 2 of 7)

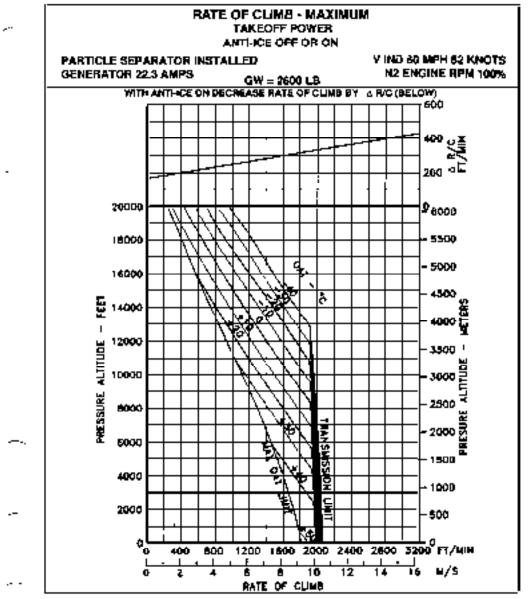


Figure 4-4. Rate of climb - Maximum - Takeoff power - particle expansion installed (Sheet 4 of 7)

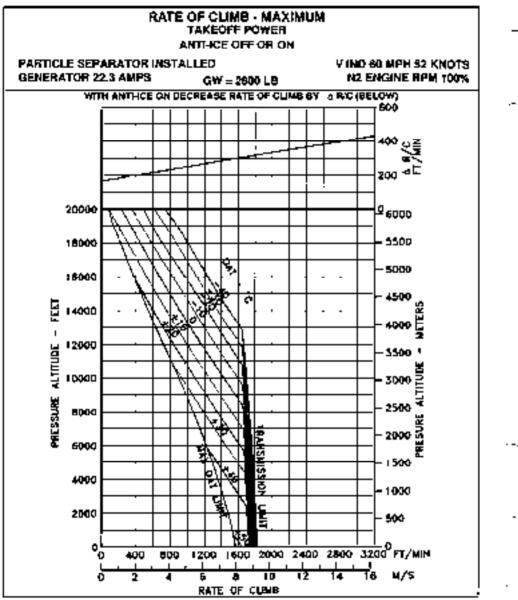


Figure 4-4. Ante of almb - Maximum - Takaoff power - particle veparator installed (Sheet 5 of 7)

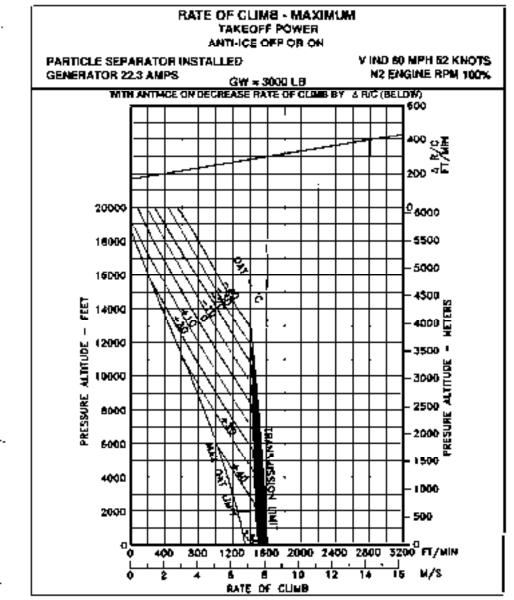


Figure 4-4. Rate of climb - Maximum - Takeoff power - particle separator installed (Sheet 6 of 7)

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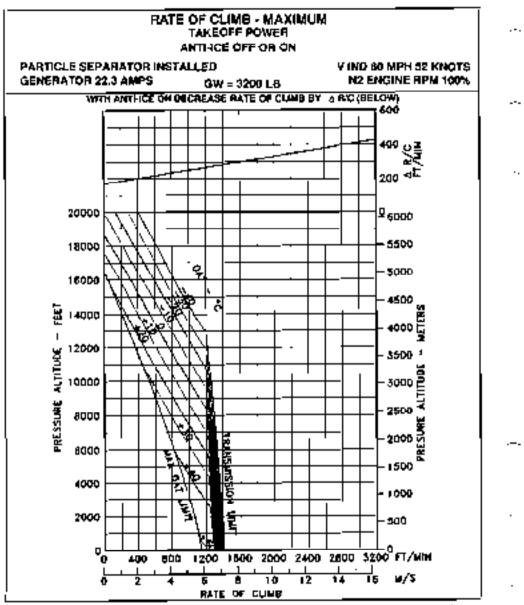


Figure 4-4. Rate of crimb - Maximum - Teksoft power - particle separator installed (Sheet 7 of 7)

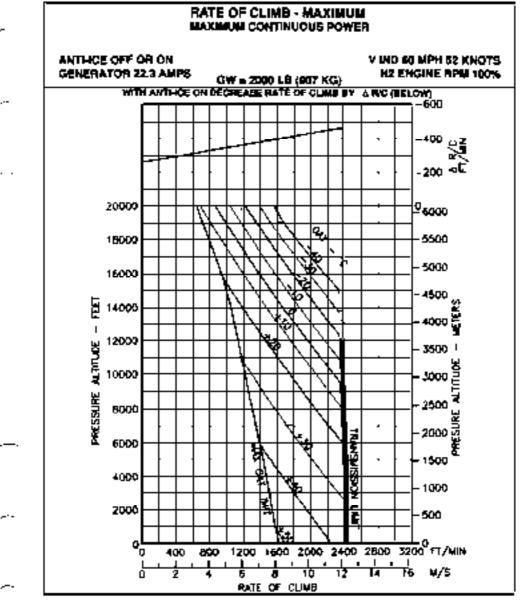


Figure 4-5, Rate of climb - Maximum - Max continuous power - basic angles intel (Sheet 1 of 7)

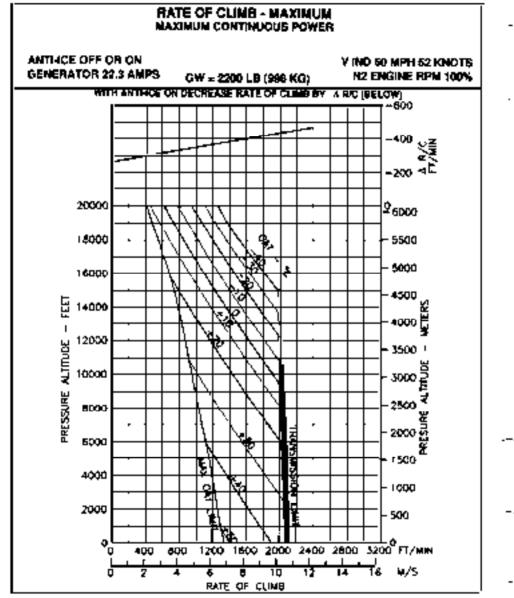


Figure 4-5. Rate of climb - Maximum - Max continuous power - basic engine intel (Sheet 2 of 7)

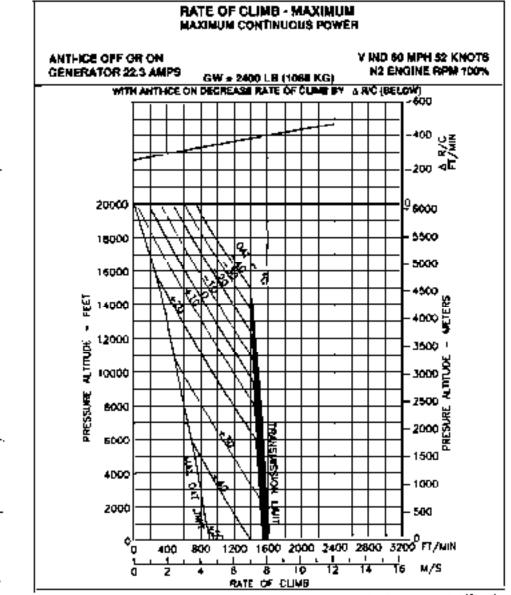


Figure 4-5 Rete of climb - Maximum - Max continuous power - basic engine intet (Shreit 3 of 7)

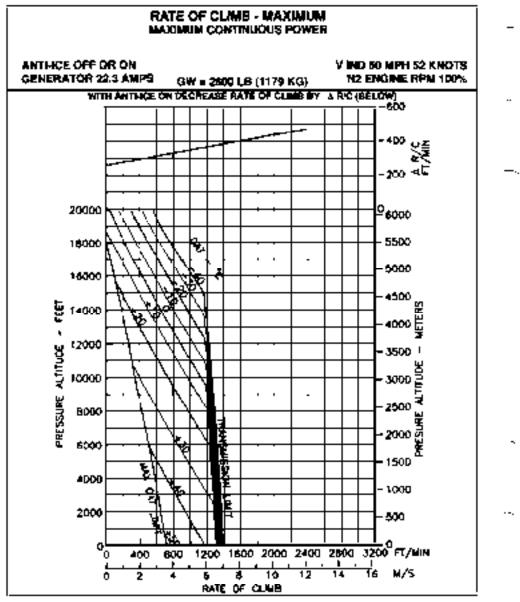


Figure 4-5. Rate of climb - Maximum - Max continuous power - basic angine Infat (Sheet 4 of 7)

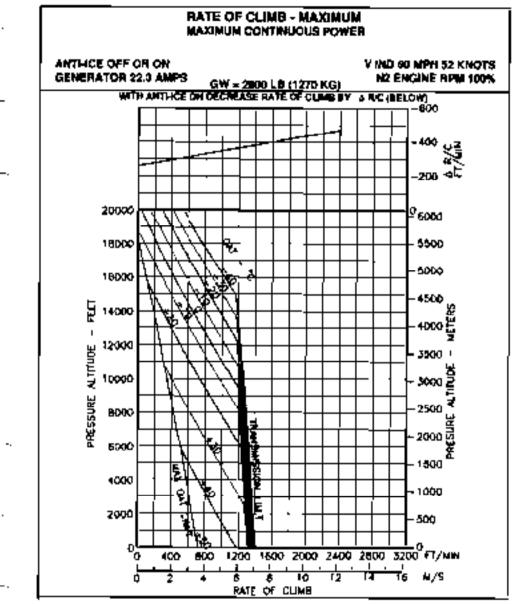


Figure 4-5. Bate of climb - Maximum - Max continuous power - basic angine intet (Sheet 5 of 7)

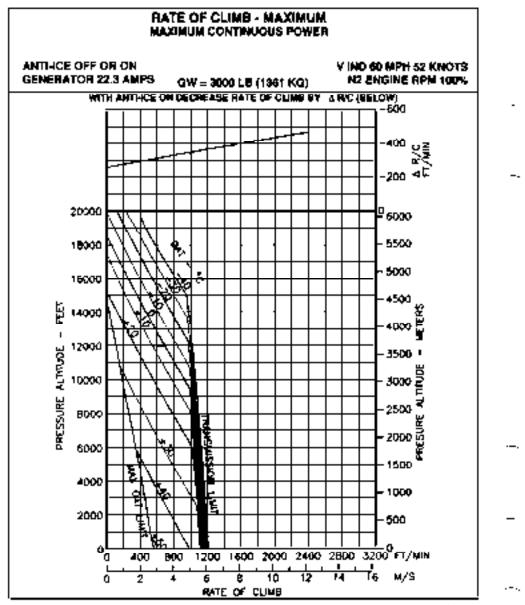


Figure 4-5. Rate of climb - Maximum - Max continuous power - basic engine inter (Sheet 5 of 7)

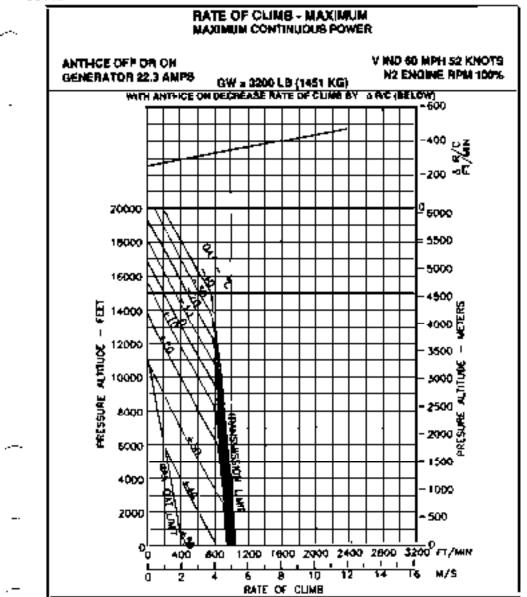


Figure 4-5. Rate of climit - Maximum - Max continuous power - basic angine Intel (Sheet 7 of 7)

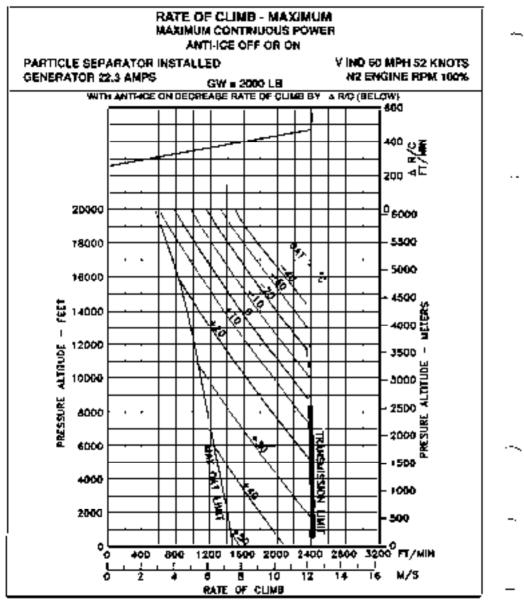


Figure 4-5. Rate of cMMD - Meximum - Mex continuous power - particle separator installed (Sheet 1 of 7)

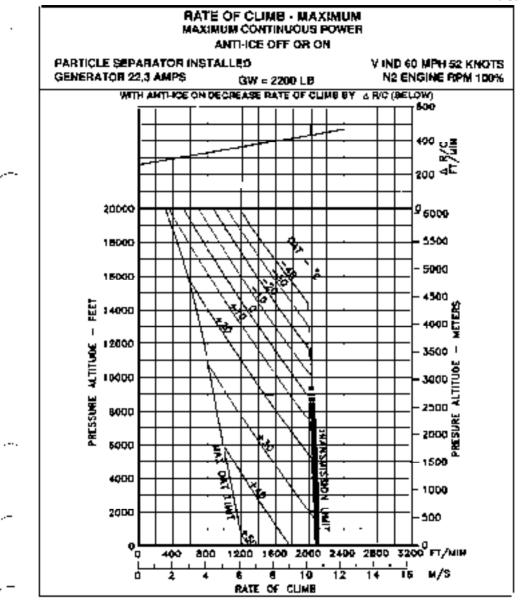
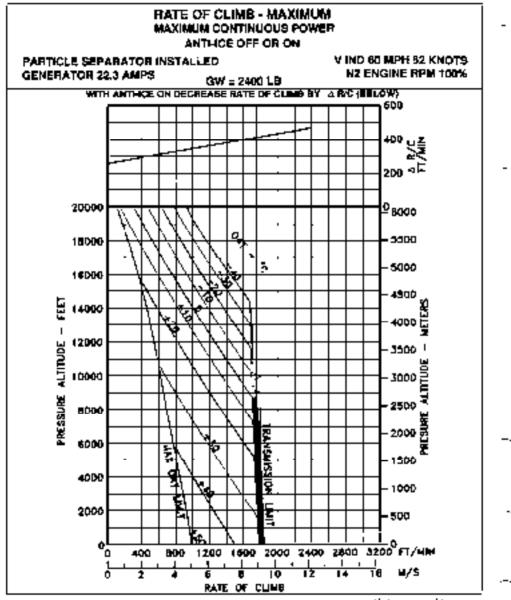
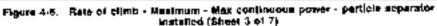


Figure 4-5. Rate of climb - Maximum - Max continuous power - particle separator installed (Sheet 2 of 7)





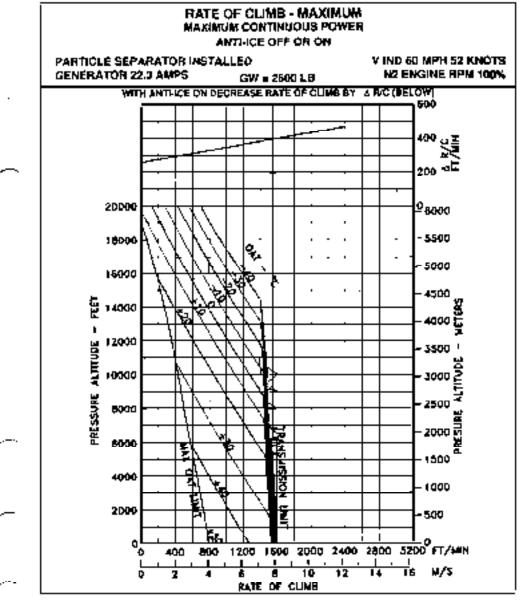


Figure 4-6. Rate of climb - Maximum - Max continuous power - particle separator Installed (Sheet 4 of 7)

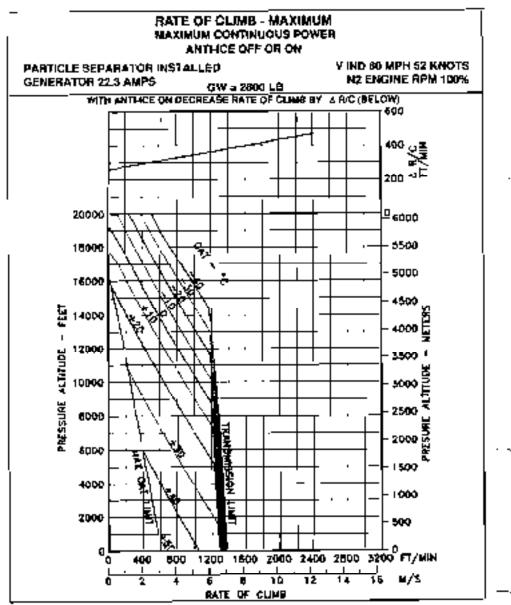


Figure 4-5. Role of climb - Maximum - Max continuous power - particle apparator installed (Start 5 of 7)

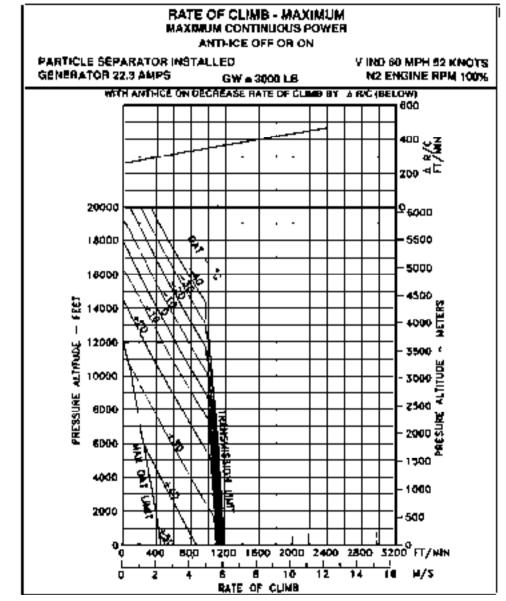


Figure 4-8. Rate of climb - Maximum - Max continuous power - particle separator installed (Shoet 6 of 7)

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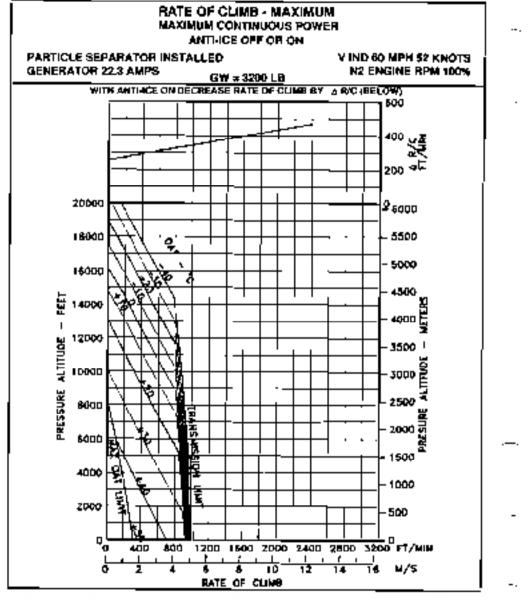
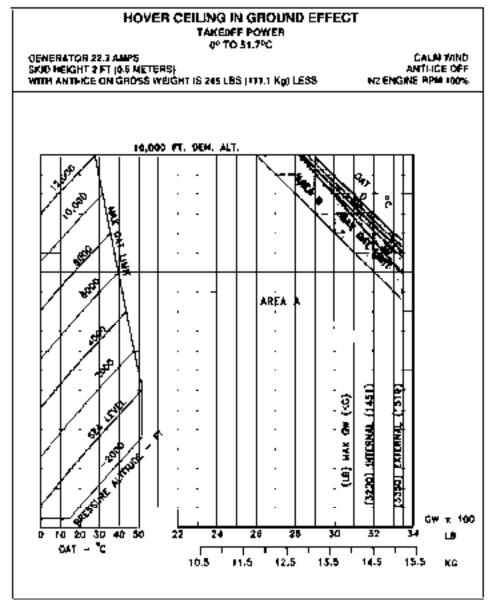
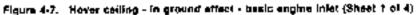


Figure 4-5. Rete of climb - Maximum - Max continuous power - particle separatoinstalled (Sheet 7 of 7)





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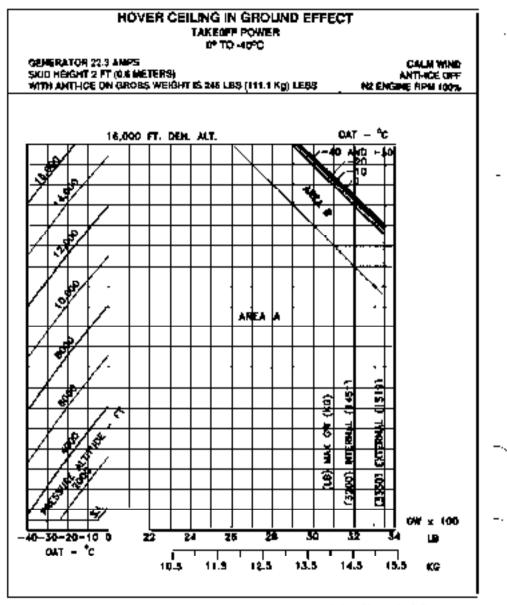


Figure 4-7. Hover ceiling - in ground effect - basic engine inlet (Sheet 2 of 4)

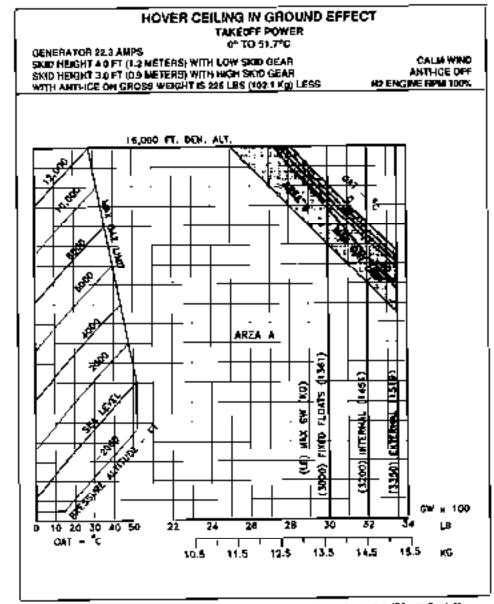


Figure 4-7. Mover chilling - in growthd effect - basic engine intel (Sheet 3 of 4)

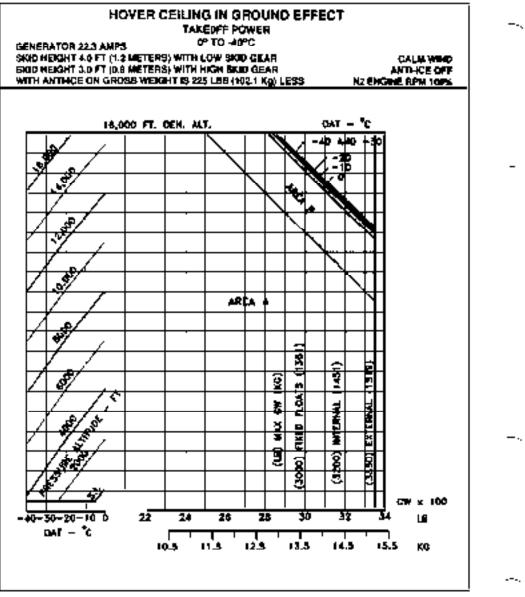


Figure 4-7. Hover celling - in ground effect - basic engine inlet (Sheet 4 of 4)

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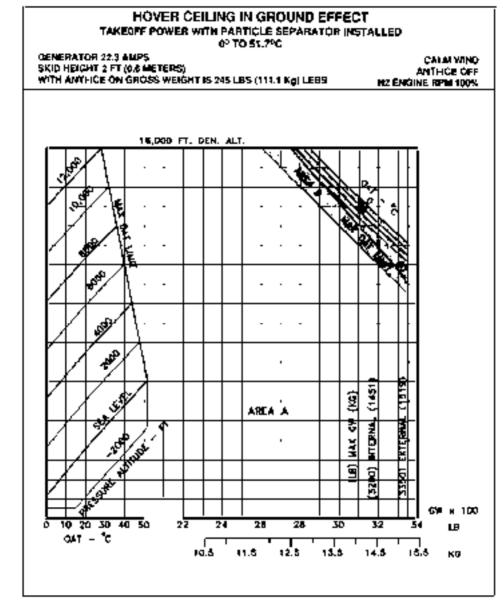


Figure 4-8. Hover ceiling - to ground effect - particle separator installed (Sheet 1 of 4)

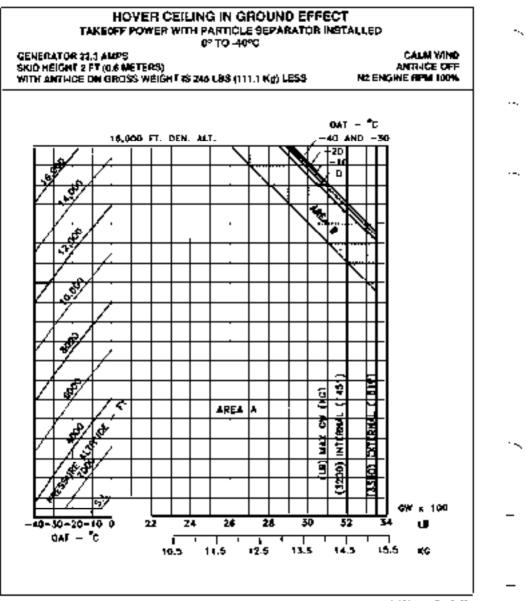


Figure 4-8. Nover calling - in ground effect - particle separator installed (Sheet 2 of 4).

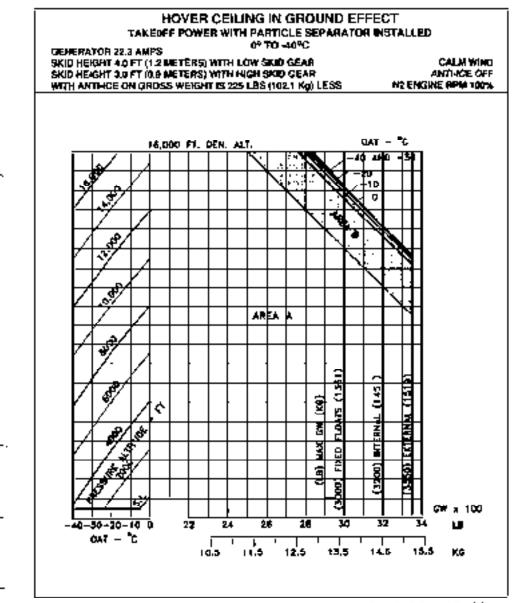


Figure 4-6. Hover ceiling - in ground effect - perticle separator installed (Sheet 3 of 4)

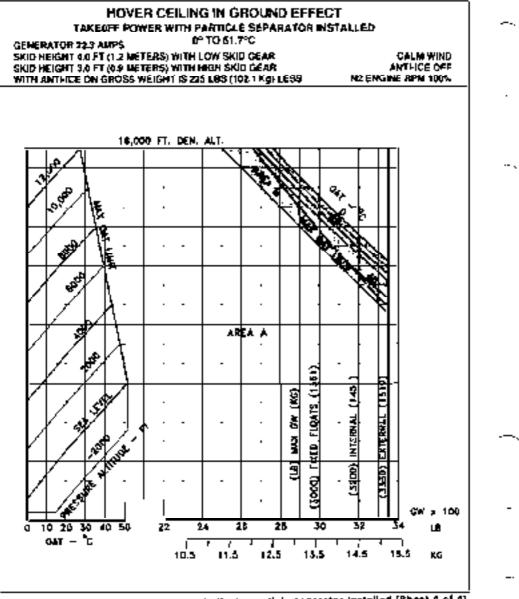
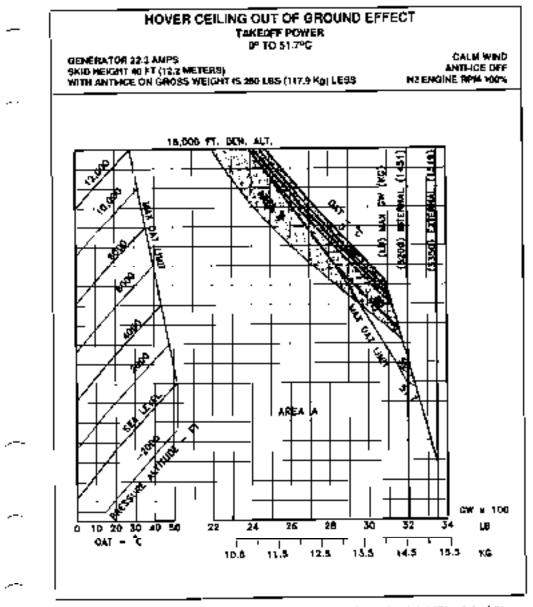


Figure 4-5. Hover ceiting - in ground effect - particle teparator installed [Sheet 4 of 4]

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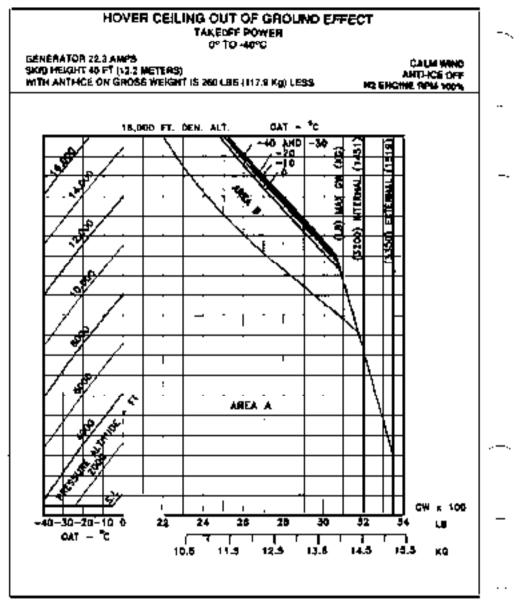


Figure 4-9. Nover calling - out of ground affect - basic angine inter (Sheat 2 of 2)

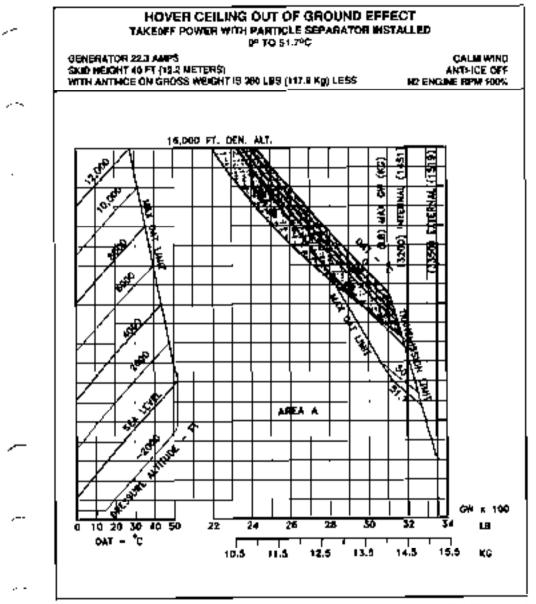


Figure 4-10. Hover calling - out of ground effect - particle separator installed (Sheet 1 of 2)

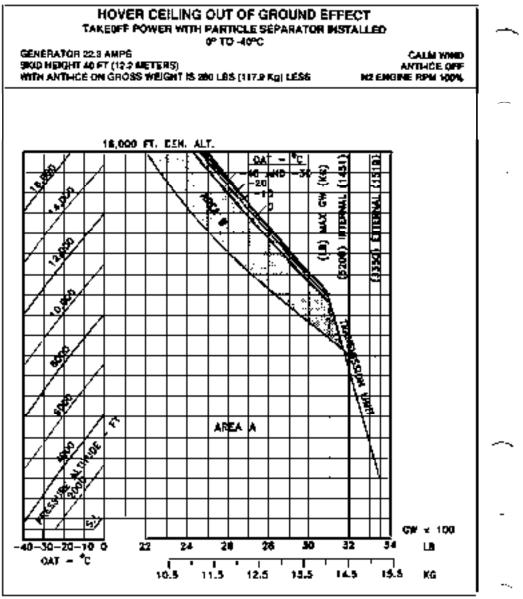


Figure 4-10. Mover celling - out of ground affect - particle separator installed (Sheet 2 of 2)