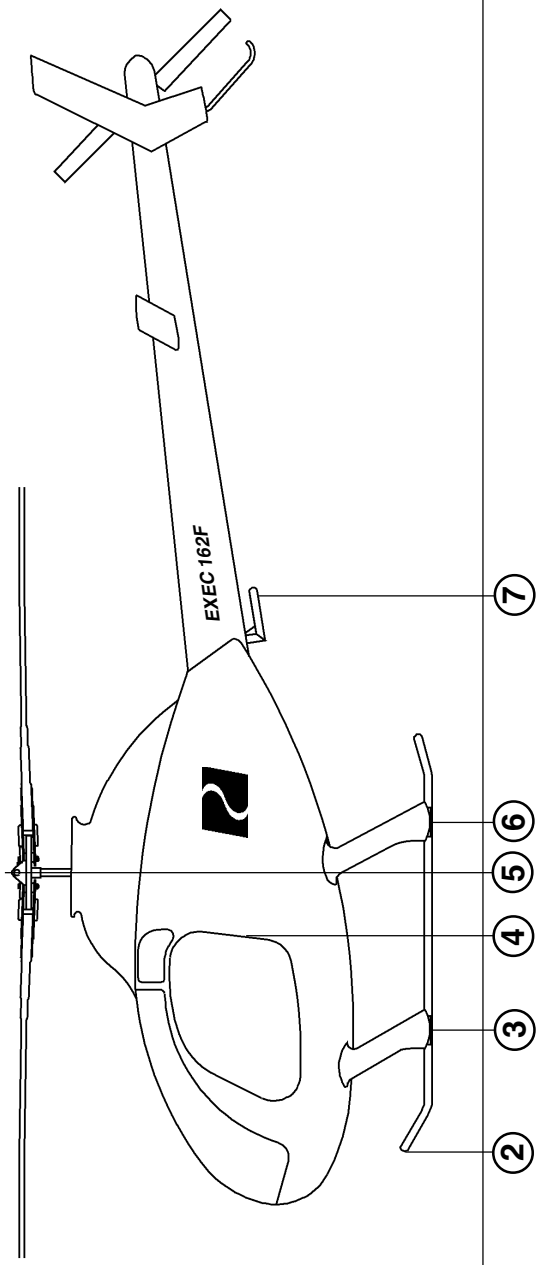
FORE/AFT ARM INCH

1. DATUM 0
2. FORWARD WEIGHT POSITION 37.25
3. FORWARD WEIGHING POINT 55.75
4. SEATS 71.0
5. MAIN SHAFT AND GAS TANKS 100.0
6. REAR WEIGHING POINT 109.25
7. REAR WEIGHT POSITION 163.0

LATERAL ARM INCH

PASSENGER SKID ..... +31.5R
PASSENGER SEAT ..... +10.5R
PASSENGER GAS TANK ..... +18.5R
PILOT SKID ..... –31.25L
PILOT SEAT ..... –10.25L
PILOT GAS TANK ..... –18.25L



DATUM SCALE IS GRADUATED IN INCHES. THESE CALCULATIONS ARE DETERMINED WITH THE MAIN ROTOR SHAFT 90 DEGREES TO THE GROUND WHEN THE AIRCRAFT IS WEIGHED.

D. Engine failure above 500 feet AGL:
   1. Lower collective to maintain rotor RPM and enter normal autorotation (see page 16).
   2. Establish a steady autorotation descent at approximately 65 MPH.
   3. Adjust collective to keep rotor RPM 100%.
   4. After a steady autorotation is established, select a landing spot and maneuver as required so the landing will be upwind.
   5. A restart may be attempted at pilot's discretion, if sufficient time is available.
   6. If unable to restart, turn off unnecessary switches and shut off the fuel valve if sufficient time is available.
   7. At about 35 feet AGL, begin a cyclic flare to reduce forward and descent speed. Level at 3 to 5 feet of clearance between the tail rotor and the ground. Increase collective pitch to cushion ground contact as the aircraft settles below 30 inches AGL.
   8. Maintain heading with the pedals.

E. Glide distance configuration:
   1. Airspeed approximately 65 MPH.
   2. Rotor RPM approximately 100%
   3. Increase rotor RPM to 104% when below 500 feet AGL.

Section 6. Weight and Balance

The center of gravity (C.G.) requirement for any helicopter is very important to its safe operation. In order to determine that your RotorWay EXEC 162F has been built correctly and the weight and balance is correct, you will have to perform a static hang test.

Prior to performing the hang test, the following operating conditions and limitations should be reviewed:

1. The empty weight of the EXEC 162F is 975 lbs. (442 kg)

2. The maximum take off weight is 1500 lbs. (680 kg)

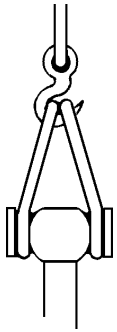
3. The maximum variable load, consisting of pilot, passenger, fuel, and any ballast is 525 lbs. (238 kg)

4. Maximum cabin weight is 425 lbs. (193 kg)

5. SOLO flight is performed ONLY FROM THE LEFT SEAT and must have the ballast weight placed on the front passenger skid. The cyclic handle should fall within the 6 inch diameter control area of operation in a hover (see diagram on page 18).

6. DUAL flight requires the ballast weight be placed on the rear mount tube under the tail boom. Again the cyclic handle should fall within the 6 inch diameter control area of operation in a hover (see diagram on page 18).

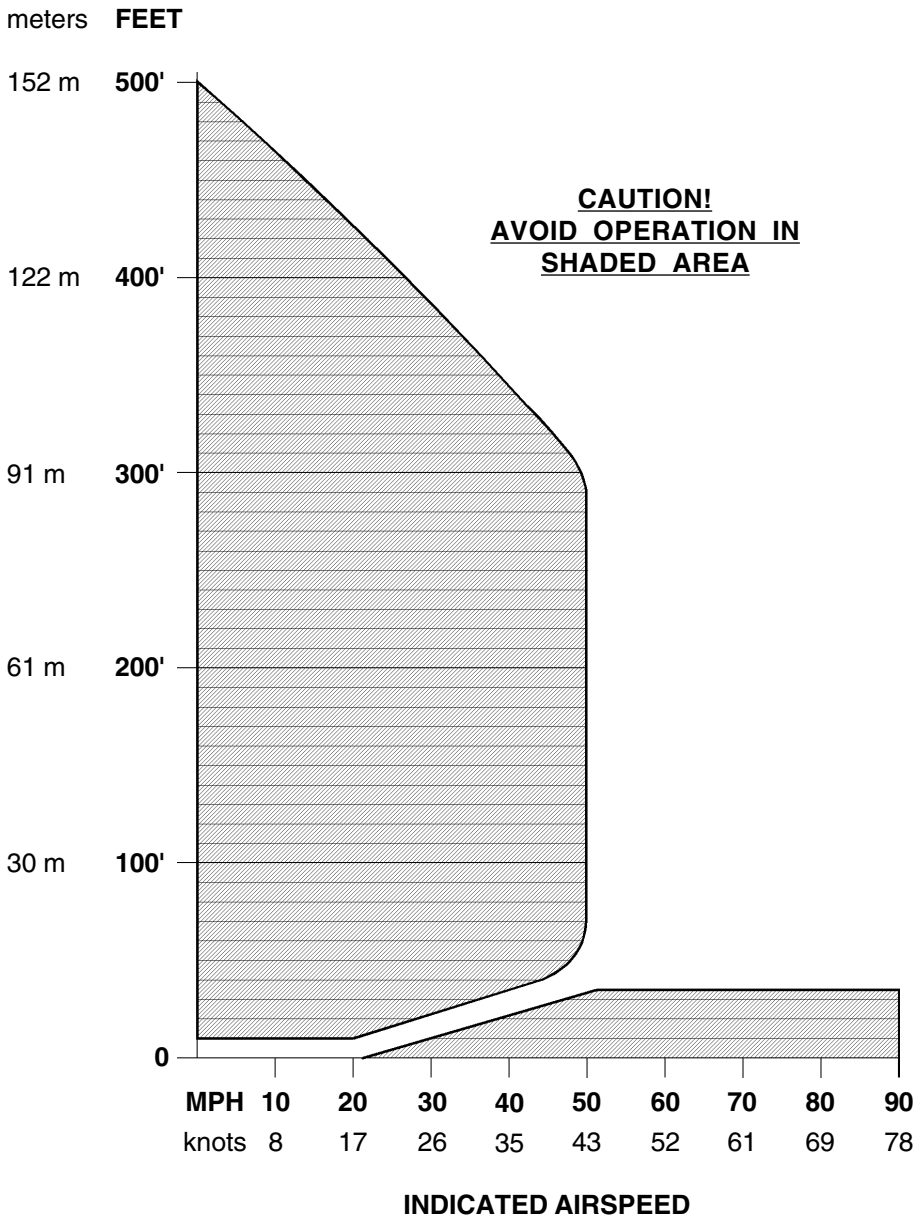
The hang test requires a facility that will allow the aircraft to be suspended approximately 6 inches from the ground, hanging from the knuckle of the main rotor shaft (see sketch below).



NOTE: Hook should be centered over shaft to distribute weight evenly.

HEIGHT VELOCITY ENVELOPE

NOTE: Out of ground effect (O.G.E.) hovers are prohibited for all Exec pilots under 150 hours.



Section 5. Performance

Hover in ground effect ..... 7000 feet (2133 m)

Hover out of ground effect ..... 5000 feet (1524 m)

Service ceiling ..... 10,000 feet (3048 m)

Range with maximum fuel at optimum cruise power ..... 180 miles/2hrs. (289 kilometers)

Normal cruise ..... 95 MPH (82 knots)

Maximum airspeed ..... 115 MPH (100 knots)

Autorotation Procedure From Altitude:

For asymmetrical rotor blades

1. Lower collective **FULL DOWN**, apply left pedal to maintain trim, adjust cyclic to maintain level attitude.

2. Adjust collective to maintain rotor RPM within the green (100%).

3. Adjust airspeed to 65 MPH (60-70 MPH limit).

4. Begin cyclic flare at approximately 35 feet AGL using approximately 30 degree flare angle. Level aircraft at 3 – 5 feet of clearance between the tail rotor and the ground. Rotor RPM should typically increase 5 – 7% during the flare.

5. During level off, add collective pitch if you are settling too rapidly.

6. Allow aircraft to settle to 30 inches AGL. As the aircraft settles below 30 inches, apply collective pitch to cushion ground contact.

NOTE: AUTOROTATION TO THE GROUND IS NOT RECOMMENDED DURING TRAINING AND PRACTICE.

For this test to be accurate the aircraft must be complete with the following:

1. Full coolant and oil in aircraft
2. No fuel in tanks
3. Enclosed area, no wind

There will be three test configurations of the aircraft, each with a different cabin loading. If the helicopter falls within plus or minus 1/2 degree both laterally and fore/aft of the specified angles of the three tests, and if the helicopter has been properly rigged, the aircraft should be ready for the first run-ups and liftoffs.

NOTE: During all tests the main rotor blades must remain in the fore and aft position (parallel to the tail boom). Values do not include doors or avionics package.

Using the Hang Test Diagram on page 22, the following results should be obtained within 1/2 degree (plus or minus) in all three tests:

A. EMPTY AIRCRAFT (no cabin weight, ballast weight in solo front skid location):
   Fore and Aft ..... 3° aft
   Lateral ..... 2° passenger side

B. PILOT ONLY 150 lbs. (ballast weight in solo front skid location):
   Fore and Aft ..... 1° fore
   Lateral ..... 0°

C. PILOT 210 lbs. and PASSENGER 210 lbs. (ballast weight in rear dual location):
   Fore and Aft ..... 5° fore
   Lateral ..... 1/2° passenger side

The results of these tests should be recorded in the appropriate columns on the diagram provided on page 22.

IMPORTANT: If you are unable to achieve the results specified above within plus or minus 1/2 degree, contact RotorWay Customer Service Department for assistance before attempting to lift off the aircraft. The weight and balance of any helicopter is critical and this helicopter should not be flown until the pilot is aware of the weight and balance schedule and the hang test has been satisfactorily performed.

Section 4. Emergency Procedures

A. Engine failure General:
   1. A change in noise level, a right yaw and low oil pressure may be the first indication of an engine failure.

   2. Engine failure at high speed, high power, will result in a tendency for the helicopter to pitch nose up.

B. Engine failure below approximately 8 feet AGL:
   1. Maintain level attitude with cyclic.

   2. Apply left pedal as required to prevent yawing.

   3. Collective pitch should not be reduced by any significant extent.

   4. Increase collective just before touchdown to cushion landing.

C. Engine failure between 8 feet and 500 feet AGL:
   1. Lower collective lever to maintain rotor RPM. The amount of and duration of collective reduction depends upon the height above the ground at which the engine failure occurs.

   2. If height permits, adjust collective to achieve 100% rotor RPM.

   3. Use cyclic and collective as required to carry out engine off landing.

   4. Maintain heading with pedals.

SAMPLE WEIGHT AND BALANCE
AIRCRAFT ON SCALES

No ballast weight, no fuel in aircraft.
Weight x Arm Inch = Moment Inch
Total Moment Inch ÷ Total Weight = Balance Location

FORE/AFT	WT. LBS		ARM INCH		MOMENT INCH LBS.
Front Scale	71	x	55.75	=	3958.25
Rear Scale	853	x	109.25	=	93190.25
	924				**97148.50**

97148.50 ÷ 924 = **105.13 FORE/AFT CG LOCATION**

LATERAL	WT. LBS		ARM INCH		MOMENT INCH LBS.
Passenger Skid	474	x	31.5+	=	14931.0
Pilot Skid	450	x	31.25 -	=	14062.5 -
	924				**868.5**

868.5 ÷ 924 = **.94+ LATERAL CG LOCATION**

SAMPLE WEIGHT AND BALANCE
SOLO FLIGHT

FORE/AFT	WT. LBS		ARM INCH		MOMENT INCH LBS.
Basic Weight	924	x	105.13	=	97140.12
Ballast Wt. Forward	27	x	37.25	=	1005.75
Pilot	210	x	71.00	=	14910.00
Fuel	60	x	100.00	=	6000.00
	1221				**119055.87**

119055.87 ÷ 1221 = **97.50 FORE/AFT CG LOCATION**
(See chart on page 26)

LATERAL	WT. LBS		ARM INCH		MOMENT INCH LBS.
Basic Weight	924	x	.94+	=	868.5+
Ballast Wt. Pass. Skid	27	x	31.50+	=	850.5+
Pilot	210	x	10.25 -	=	2152.5 -
Fuel Pilot	30	x	18.25 -	=	547.5 -
Fuel Pass.	30	x	18.50+	=	555.0+
	1221				**426.0 -**

426 - ÷ 1221 = **.34 - LATERAL CG LOCATION**
(See chart on page 26)

Run up:

Oil temperature ..... green
Oil pressure ..... green
Water temperature ..... green
Clutch handle ..... in
Pedals ..... centered
Cyclic ..... centered
Collective lever ..... set 3° to 3-1/2° positive
Throttle ..... slowly increase to 100% rotor RPM
Battery voltage ..... check for charge

NOTE: During run up and run down, engine operation between 2500 and 3000 RPM should be limited due to main drive belt resonance frequency.

Take off:

Pedals ..... even to half right pedal
Cyclic ..... within 3 inches of center

The pilot should determine the correct control position during take off by noting and responding to the small movements of the aircraft when it becomes light on the skids.

Slowly raise collective, adjusting throttle to maintain rotor RPM in the green.

Economical cruise ..... manifold pressure 4 inches less than hover
Rotor RPM (in green) ..... 96 – 104% maintain in flight

Take off and operation should be conducted per height velocity envelope diagram (see page 17).

During flight, check all instruments for anomalies.

NOTE: If the yellow light on the instrument panel illuminates during flight, the helicopter should be safely landed. The pilot can identify the problem and respond accordingly. If the red light illuminates during any operation of the aircraft, the aircraft should be landed immediately and the problem determined and resolved before resuming flight.

CAUTION: DO NOT RESET THE DIGITAL DISPLAY MONITOR IN CASE OF "A" OR "B" FAULT CODES WHILE IN FLIGHT. DO NOT RESET THE PRIMARY SYSTEM IN FLIGHT IF THE SECONDARY SYSTEM IS IN OPERATION.

Section 7. FADEC System

RotorWay International's FADEC (Fully Automated Digital Electronic Control) is an electronic engine control system that is unique in the aviation industry. The system is fully redundant; if failure of the primary system occurs, a backup system will automatically activate.

One of the outstanding features of this system is the digital display monitor. By using the **SELECT** buttons, the pilot can view a number of different engine conditions. A light will illuminate next to the chosen function, and a value for that function will appear in the readout. This information is gathered by sensors located throughout the system.

When the **DIAG** function is selected, the display will show the relevant codes. Normally, a zero will appear in each readout. However, if a problem arises, a diagnostic code number will appear. The pilot can identify the problem and respond accordingly.

NOTE: To reset diagnostic errors, max RPM and fuel used values, etc., first choose the desired function using the **SELECT** buttons, then press the **RESET** button.