

HOFFMANN AIRCRAFT

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FLIGHT MANUAL

H36 DIMONA

This Flight Manual must be carried on board of the motorglider at all times.

Reg.No.: Ser.No.:

Owner :

.....

.....

Austrian edition of operating instructions is approved under § 33 ZLLV, Bundesgesetzblatt 415, Aug 17 1983

Published Nov 15 1985

BAZ-approved on Nov. 22 1985



Approval of translation has been done by best knowledge and judgement. In any case the original text in German language is authoritative.

Section 0

Hoffmann Flugzeugbau

Revisions

H 36 Dimona

PILOTS OPERATING HANDBOOK

LOG OF REVISIONS

Revision Number and Date	Revised Pages	Description of Revision

All manuals for the Hoffmann H 36 can be ordered from:
Hoffmann Aircraft, Richard - Neutra - Gasse 5, P.O.Box 100,
A - 1214 Vienna / Austria

WARNING!

This handbook should not be used for operational purpose
unless it is maintained in a current status.

15. Nov. 1985

BAZ-approved on Nov. 22 1985



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1
General

THIS HANDBOOK CONTAINS IMPORTANT INFORMATION FOR THE
PILOT!

This information is broken down into informative sections
in the order shown below.

Section 0	.....	Revisions
Section 1	.....	General
Section 2	.....	Limitations
Section 3	.....	Emergency Procedures
Section 4	.....	Normal Procedures
Section 5	.....	Performance data
Section 6	.....	Weight and Balance/Equipment List
Section 7	.....	Motor Glider and Systems Descriptions
Section 8	Aircraft Handling, Service & Maintenance
Section 9	Supplements

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1
General

Table of Contents

Section 1

General

Paragraph	Page
1.1 Introduction	4
1.2 Three view drawings	4
1.3 Description	5
1.4 Engine	5
1.5 Propeller	5
1.6 Approved Fuels	5
1.7 Approved Lubricants	6
1.8 Maximum Certified Weights	6
1.9 Symbols, Abbreviations and Terminology	6

15. Nov. 1985

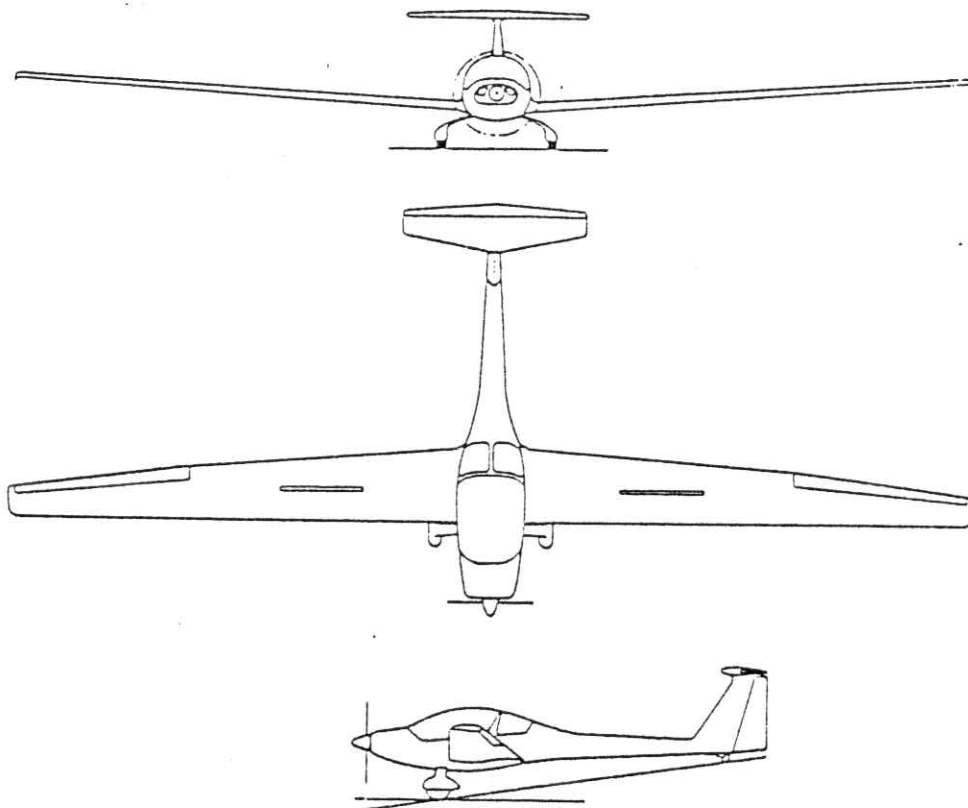
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1
General

1.1 Introduction:

This handbook contains material required to be furnished to the pilot by JAR 22. It also contains supplemental data supplied by the airframe manufacturer. Each section is divided by tab markers with Emergency Procedures tabbed in red.

1.2 Three View Drawings:



15. Nov. 1985

Table of Contents

Section 2

LIMITATIONS

Paragraph:	Page
2.1 Category of Airworthiness	8
2.2 Permitted Operations	8
2.3 Minimum Equipment	8
2.4 Engine Limitations	9
2.5 Oil Pressure	9
2.6 Oil Temperature	9
2.7 Cylinder Head Temperature	9
2.8 Voltmeter	9
2.9 Airspeed Limitations and Load Factor Limits	10 - 11
2.10 Airspeed Indicator Markings	12
2.11 Crew Requirements	12
2.12 Weights	12
2.13 Center of Gravity Limitations	13
2.14 Placards and Markings	14 - 17

15 Nov. 1985

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2
Limitations

2. Operating Limitations

2.1 Category of Airworthiness

Utility (U) according to JAR 22
Certifications basis: JAR 22 (Joint Airworthiness Requirements for gliders and motorgliders) effective 15.3.82

2.2 Permitted Operations:

The H 36 DIMONA is certified for VFR flights .

Flights into known icing conditions are prohibited.
Approved aerobatic manoeuvres are:

Inside loops
Spins
Vertical turns
Lazy Eights

2.3 Minimum Equipment:

1 Airspeed indicator
1 Altimeter
1 RPM counter with hour-meter
1 Oil pressure indicator
1 Oil temperature indicator
1 Voltmeter
1 Fuel quantity indicator
1 Magnetic compass
1 Cylinderhead temperature
2 Seat Belts
Loading Placard
Data Plate
Flight Manual (Approved)
1 Warning light for energised starter circuit.

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2-2

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2
Limitations

2.4 Engine Limitations

Engine Type: Limbach L 2000 EB 1.C

RPM Limitations (Indicator Markings)

Maximum take off RPM (maximum 5 minutes) 59 KW (80 hp.)
3.400 RPM

Maximum ambient atmospheric temperatur - + 38 °C (+100° F)

Maximum RPM (METO) 53 KW (72 hp.) 3.000 RPM

Red Line - 3.400 RPM

Caution Range - Yellow Arc 3.000 - 3.400 RPM

Operating RPM - Green Arc 700 - 3.000 RPM

CAUTION
Avoid RPM during cruise below 2300 min⁻¹ !

2.5 Oil Pressure:

Maximum Oil Pressure (red line) 4 bar (55.8 psi)

Minimum Oil Pressure (red line) 1 bar (13.9 psi)

Operating Range (green arc) 1 - 4 bar (13.9 - 55.8 psi)

2.6 Oil Temperature:

Maximum Oil Temperature (red line) 120° C (248° F)

Operating Range (green arc) 50 - 120° C (122 - 248° F)

Minimum Temperature (red line) 50° C (122° F)

2.7 Cylinder Head Temperature:

Maximum Cylinder head temperature (red line) 250° C. (482° F)

2.8 Voltmeter:

Maximum voltage with engine running: 14 VDC (red line)

14 5 Nov 1967

2.9 Airspeed limitations and load factor limits:Maximum allowable airspeed (calm air)

V_{ne}	= 275 km/h	149 kts	170 mph
----------	------------	---------	---------

Maximum allowable airspeed (turbulent)

V_b	= 210 km/h	113 kts	130 mph
-------	------------	---------	---------

Manoeuvring speed

V_a	= 176 km/h	95 kts	109 mph
-------	------------	--------	---------

Maximum speed with airbrakes extended

V_{le}	= 275 km/h	149 kts	170 mph
----------	------------	---------	---------

Stall speed with airbrakes extended

V_{S1}	= 70 km/h	38 kts	44 mph
----------	-----------	--------	--------

Stall speed with airbrakes retracted

V_{SO}	= 70 km/h	38 kts	44 mph
----------	-----------	--------	--------

Load Limit Factors:

The following accelerations may not be exceeded
(airbrakes retracted, normal manoeuvres)

At Manoeuvring speed:	+ 5.3	- 2.65
At Maximum speed, V_{ne} :	+ 4.0	- 1.5

C A U T I O N

When flying in areas where turbulent weather may be encountered i.e. thunder clouds, wind rotors, standing waves and mountainous terrain, airspeeds between 210 - 275 km/h (113 - 149 kts) are to be avoided (Caution range in yellow colour on the Airspeed indicator).

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2
Limitations

2.9 Cont.

To reduce the risk of encountering control flutter at V_{ne} the following table should be used to determine V_{ne} at various altitudes.

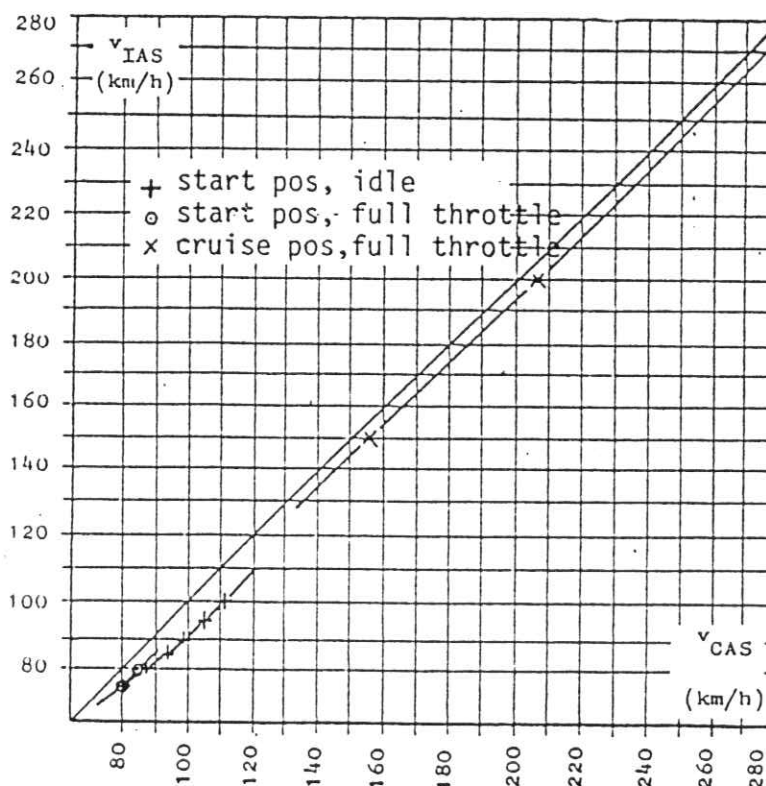
ALTITUDE	(m)	0 - 2000	3000	4000	5000	6000
	(ft)	0 - 6500	10000	13000	16500	20000
V_{ne}	(km/h)	275	259	246	233	221
	(kts)	149	140	133	126	119

NOTE

Manoeuvring speed (V) is the maximum speed at which application of full available aerodynamic control will not overstress the airplane. Increasing altitude increases True Air Speed (TAS).

Indicated Airspeed Errors

The following table illustrates airspeed errors (IAS) due to positioning of the pitot pressure and pitot static sources. Pitot and Static Pressure source: Leading edge Horizontal Stabilizer.



15 Nov. 1965

2-5

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Limitations²

2.10 Airspeed Indicator Markings (IAS):

Red Line	(Maximum allowable Airspeed)		
	275 km/h	149 kts	170 mph
Yellow arc	(Caution range)		
	210 - 275 km/h	113 - 149 kts	130 - 170 mph
Green arc	(Normal range)		
	78 - 210 km/h	42 - 113 kts	48 - 130 mph
Yellow Triangle (approach speed)			
	95 km/h	51 kts	59 mph
Blue Line (Best climb Airspeed)			
	95 km/h	51 kts	59 mph

C A U T I O N

Airspeed for the best climb Ratio is:

85 km/h	46 kts	53 mph
---------	--------	--------

2.11 Crew:

Minimum Crew - One Person (min. weight 70 kp = 155 lbs)

C A U T I O N

Solo flights may be conducted from the left seat only !

2.12 Weights:

Empty Weight: refer to section 6-3, Weigh ing report		
Max. Gross Weight:	770 kg	1698 lbs
Min. Wt. in pilots seat (incl. parachute)	70 kg	155 lbs
Max. Wt. in each seat (incl. parachute)	110 kg	243 lbs
Max. Wt. in baggage compartment	12 kg	27 lbs

C A U T I O N

Do no overstep the maximum payload stated on p.43

For more detailed loading information refer to section 6, Weight and Balance/Equipment list.

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2
Limitations

3.13 Center of Gravity Limitations

The Center of Gravity ranges are:

Forward: 270 mm aft of leading edge,
 wing root rib

Aft : - Up to 740 kg :
 385 mm aft of leading edge,
 wing root rib

- At 770 kg :
 370 mm aft of leading edge,
 wing root rib

- Between 740 and 770 kg :
 linear run between
 370 and 385 mm

For more detailed Center of Gravity information
refer to section 6, Weight and Balance/Equipment list.

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2
Limitations

2.14 Placards:

Translation of original placards in German language:

Gepäck max 12 kg	- Baggage max 12 kg
Störklappen - Radbremse	- Airbrake ... Wheel brake
Vollgas-Gas-Leerlauf	- Full - throttle - idle
Brandhahn	- Fuel shut off valve
auf ... zu	- open - closed
ein ... aus	- on ... off
Lüftung	- Cabin Air
Heizung	- Cabin Heat
Zündung	- Ignition
Kraftstoffpumpe	- Fuel pump
Hauptsicherung	- Main fuse
Kopflastig ... Trimmung	- Nose down ... trim
... Schwanzlastig	- nose up
Haubennotabwurf	- Canopy emergency jettison
Parkbremse	- Parking brake
Choke	- Choke

Text and position of placards in english language:
see following pages.

- 12345

- 36

Limitations

N - 12345

Registration Call Sign in
Center of Instrument panel

Canopy Jettison and Emergency Exit
Pull both RED handles on Canopy frame AFT
Push canopy up and away
Release safety harness
Stand up and exit aircraft from
left or right sides respectively
When using a manual parachute
release, wait 2 seconds prior to
pulling D-ring.

On lower center console

Airspeed Limits		km/h	kts	mph
Never Exceed	V_{NE}	275	149	170
Rough Air	V_B	210	113	130
Maneuvering	V_A	176	95	109

max Gross Weight 770 kg 1698 lbs
min Payload (in 70 kg 154 lbs
pilot seat)
max Payload (in 110 kg 245 lbs
any seat)
Baggage Maximum 12 kg 26,5 lbs
max Payload see Flight manual page 43

Below Canopy Frame
Left side

Altitude in ft. 0-6500	10,000	13,000	16,500	20,000
V_{ne} (KIAS)	149	140	133	126
			126	119

Below Canopy
Frame
Left sideCabin
Air
PushChoke
PullCabin
Heat
PullLabels on operating
Handles Upper center
Console

Nose up — Trim. — Nose down

Next to operating Handle

Parking brake - Pull Air Brake
Lever then move parking brake
lever aft

Next to Operating Handle

Baggage Maximum
12 kg 26,5 lbs

In Baggage compartment

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2
Limitations

Fuel Shut Off
Open -----

Closed

Center Console

CAUTION
CANOPY MUST BE CLOSED AND
LOCKED BEFORE STARTING ENGINE

Canopy Frame - Both Sides

Oil Temp.

Oil Pressure

Engine Instruments Right Hand
Panel

Cylinder Head Temp.

Ignition

ON

OFF

Starter

Main Switch

ON

OFF

Fuel Pump

ON

OFF

Next to applicable switch

Main Fuse

Propeller Pitch
2200 RPM -----
Take Off and Cruise
----- 1200 RPM
Feather

Next to Propeller Control knob

Strobe Light

Landing Light

Intercom

Position Lights

Instrument Lights

ON

OFF

Next to applicable switch
when installed as optional
equipment

Tire Pressure
2,1 bar .
30 PSI

Outboard side of wheelfairings

15 Nov. 1995

OIL
SAE 15W-40

Next to oil filler neck

Fuel
AVGAS 100 LL or
MOGAS SUPER (ROZ 97 OCZ)
Fuel Capacity
80 Ltr 21.1 US GAL

Next to Fuel filler neck

AIRBRAKE - PULL
Wheelbrake at end of travel

On airbrake handle

Canopy Jettison

Next to Canopy Jettison handle

NO STEP

Main Wheel Fairings

NO PUSH

Ailerons, Rudder and Elevator

OPEN - CLOSED

Next to Canopy Handles

FULL - THROTTLE - IDLE

next to throttle

Tachometer indicates
RPM to high
to low

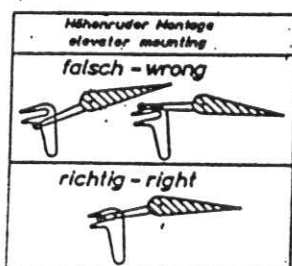
next to Tachometer

Before removing
battery insulate
Rudder cable

next to battery storage

approved aerobatic manoeuvres:
ALL AEROBATIC MANOEUVERS
INCLUSIVE SPIN AND
FLIGHTS IN CLOUDS
ARE FORBIDDEN!

Below Canopy Frame
Left Side



left side of vertical fin

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3
Emergency Procedures

Table of Contents

Section 3

EMERGENCY PROCEDURES

Paragraph	Page
3.1 Stalls, Power on	19
3.2 Stalls, Power off	19
3.3 Spin Recovery	19
3.4 Engine failure during Take-Off	20
3.5 Engine failure in flight	21
3.6 Emergency Landing	21
3.7 Icing	21
3.8 Carburetor Icing	21
3.9 Water Landings	21
3.10 Engine fire during flight	22
3.11 Electrical fire during flight	22
3.12 Canopy Jettison, Aircraft exiting during flight.	22
3.13 Jamming of Starter Relay Contacts	22

15 Nov. 1985

3-1

3.1 Stalls, Power On:

On coming stall warning can be recognized by buffeting on the aircraft and a loss of positive control in the stick and pedals. If permitted to continue, the aircraft will stall and roll over on the stalled wing. A spin may result. When buffeting is encountered relax back pressure on the stick, and if available, add power. Recovery from a clean stall will result in an altitude loss of about 40 meters (130 ft).

3.2 Stalls, Power Off, Prop Feathered:

On coming stall warning is buffeting as with power on, however, the aircraft will not roll on a wing and can be held level with aileron and rudder control. The aircraft will sink vertically at a rate of 700 fpm. Stall recovery in this mode is to relax back pressure on the stick.

3.3 Spin Recovery:

Reduce power and push control stick full forward. Apply full rudder opposite to spin rotation. Recover smoothly from the dive.

C A U T I O N

The aerodynamic clean form of the DIMONA permits speed to build rapidly. V_{ne} must not be exceeded. Immediate spin recovery will result in an altitude loss of 280 ft.

C A U T I O N

If, under unfavourable circumstances with engine idle a flat spin will result, recover immediately as above but add power.

53 Nov 1985

3.4 Engine Failure during Take-Off:

Check immediately Fuel valve - ON position
 Fuel pump - ON position

If these are not the cause of engine failure, and the altitude is less than 300 ft, land straight ahead. If more than 300 ft altitude are available, a 180° turn in the glider mode can be made. The propeller should be feathered to reduce drag.

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3-3

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Emergency Procedures³

3.5. Engine Failure during flight:

Check immediately : Fuel Valve - ON position
Fuel pump - switch ON

If the engine does not start or run, feather prop and establish a glide. Best glide ratio will be accomplished at an airspeed of 105 km/h (57 kts).

3.6 Emergency Landing:

Choose a suitable field while altitude is available. Once you have made your decision, stick to it! Observe wind direction and on final approach position the aircraft to land into the wind. Attempt to land to a point with minimum ground roll. Prior to touchdown, all switches - OFF.

Should engine power still be available, the selected landing site should be surveyed while airborne to see if obstacles exist.

After landing - Throttle - Closed, all switches - OFF.

3.7 Icing

Attempt to leave the icing area as soon as possible. If necessary, change altitude to escape icing layer. Continue to move controls to prohibit lockage from ice. When the canopy is iced over, the weather window may be opened.

3.8 Carburetor Icing

Throttle - FULL POWER.
Attempt to leave icing area as soon as possible, if necessary, change altitude.

3.9 Water Landing:

Stop engine and feather propeller. On final approach jettison canopy. Land with minimum airspeed. On touchdown protect your face with the left arm. After touchdown release seat harness and exit aircraft.

23 NOV. 1965

3.10 Engine fire during flight:

Throttle - full power
Fuel Valve - OFF
Cabin Heat - Push , Cabin air - Pull
Ignition - OFF when engine stops
Slipping the aircraft can keep smoke and flames from the cockpit
Execute normal landing from a glide

3.11 Electrical Fire during flight:

Main Switch - OFF
Circuit breakers - PULL OFF

The engine will continue to run. Land as soon as practical or at the next airfield

3.12 Canopy Jettison - Aircraft exiting during flight:

With engine running - Throttle CLOSED
Ignition OFF

With engine stopped - Prop feathered - Turn prop feather handle to START

Red Canopy locks, left and right - swing AFT
Place both hands above your head against canopy - PUSH
Release safety harness, evacuate the aircraft, left and right
When using a manual parachute release, wait two seconds before activating parachute.

3.13 Jamming of Starter Relay Contacts:

- While airborne - Main Switch - Off
Circuit breakers - Off
After 30 seconds - Main Switch - On
Circuit breakers - On
If red Warning Light flashes up again proceed with 3.11, Electrical Fire during flight
- On ground - Don't attempt a take-off
Main Switch - Off
Ignition - Off

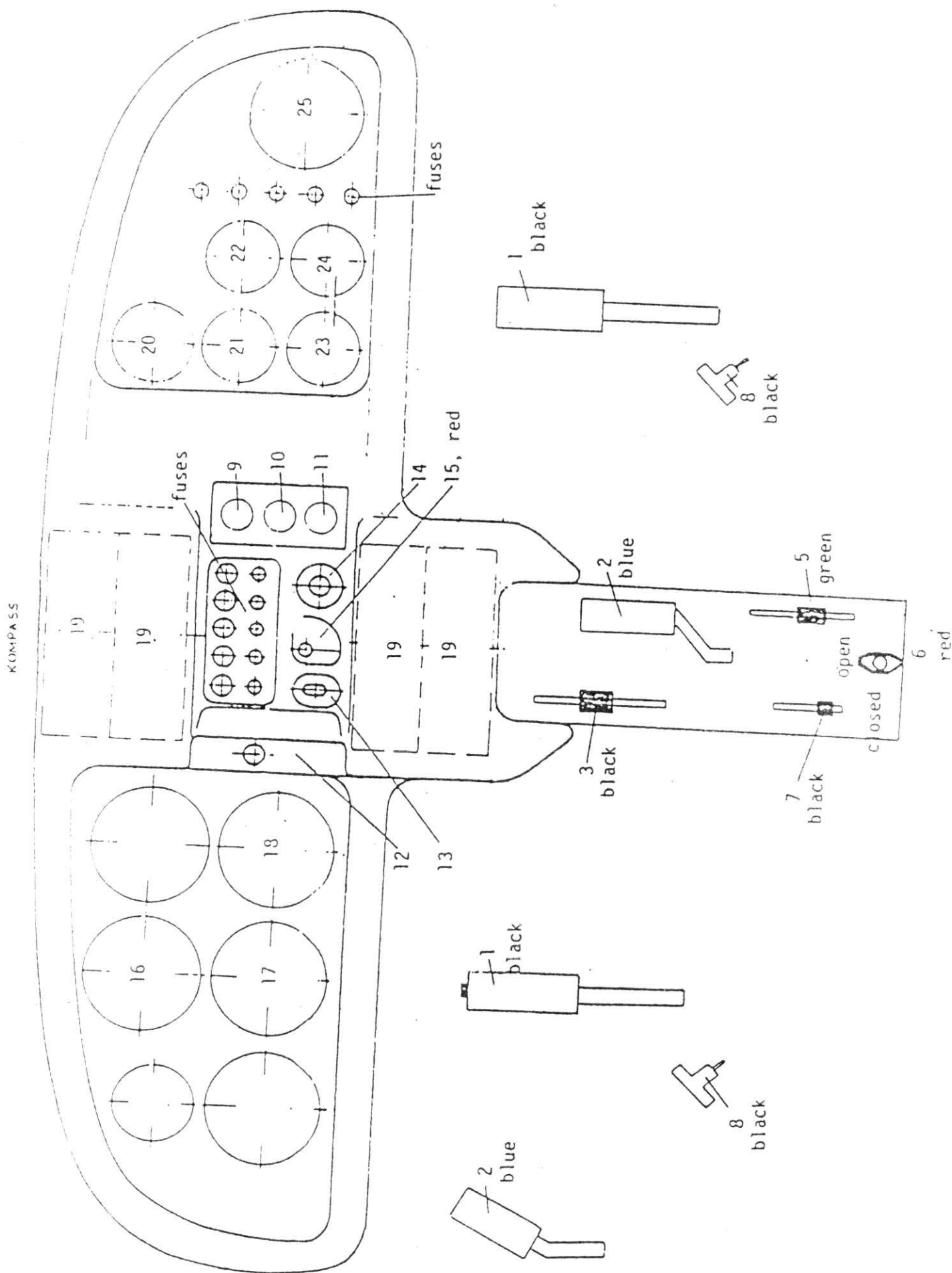
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4

Normal Procedures

Table of Contents
Section 4
NORMAL PROCEDURES

Paragraph	Page
4.1 Cockpit Layout	24-25
4.2 Instrument Console Layout	25
4.3 Lower Console Layout	26
4.4 Preflight Inspection	26-27
4.5 Preflight Inspection walk around Guide	28
4.6 Before starting Engine	28
4.7 Starting Engine	29
4.8 Before Take-Off check	30
4.9 Take-Off and Climb	30
4.10 Cruise	31
4.11 Engine Shut-Down and Restart in flight	31
4.12 Soaring	31
4.13 Permitted Aerobatic Manoeuvres	32
4.14 Descent and Approach	33
4.15 Landing	33
4.16 Engine Shut-Down	33
4.17 Slip	33.1-33.2



1. Dez. 1986

4.1 Cockpit Layout and Controls Illustration:

- 1 - stick
- 2 - airbrake lever
- 3 - throttle
- 5 - trim
- 6 - fuel shut off valve
- 7 - parking brake
- 8 - Rudder ped. adj.
- 9 - cabin air
- 10 - cabin heat
- 11 - choke
- 12 - Propeller lever
- 13 - Ignition switch
- 14 - Starter button
- 15 - main switch

4.2 Instrument Console Layout:

- 16 - airspeed indicator
- 17 - altimeter
- 18 - climb speed indicator
- 19 - COM/AVIONIC
- 20 - cyl. head temp.
- 21 - oil temp
- 22 - oil press
- 23 - voltmeter
- 24 - fuel
- 25 - RPM indicator & hourmeter

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4
Normal Procedures4.3 Lower Console Layout:

- 2 - airbrake
- 3 - throttle
- 5 - trim
- 6 - fuel shut off valve
- 7 - parking brake

4.4 Preflight Inspection: (The areas where these visual checks are to be performed are illustrated in 4.5 "Walk around Guide").

1. Ignition OFF - Main Switch OFF
2. Open engine cowlings - CHECK:
 - Oil Level
 - Security of engine controls
 - Engine and engine parts for security and damage
 - Foreign objects in engine compartment
 - Close engine cowlings
3. Main Landing Gear - CHECK:
 - For excessive wear, cuts, abrasions
 - Wheel fairings for condition and security
 - Tire Pressure 2.1 bar (30 psi)
4. Right Wing - CHECK
 - Fiber Glass Skin for damage or cracks
 - Ailerons and push pull tubes for security and condition
 - Air Brakes and torque tube for security and condition
 - Wing Tip and position light for security and condition
5. Aft Fuselage - CHECK
 - Fiber Glass Skin for damage or cracks

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4
Normal Procedures

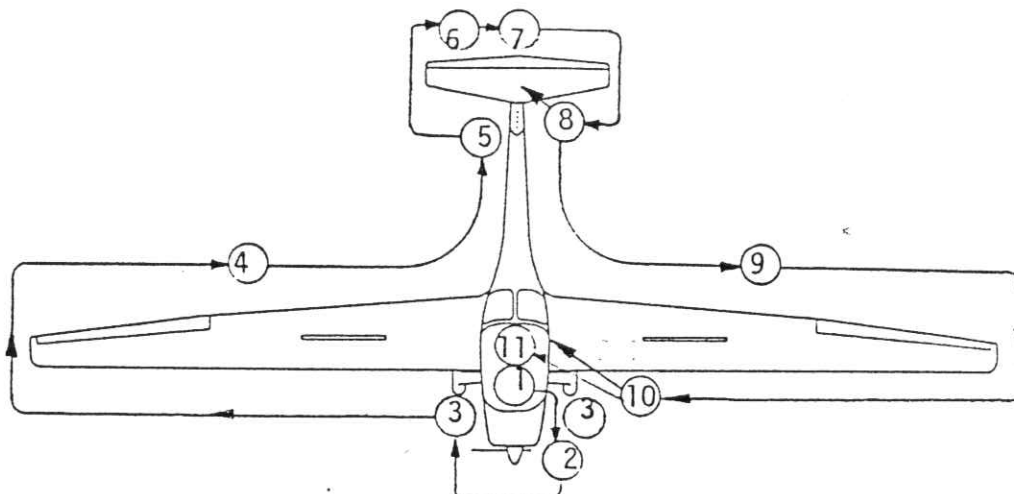
6. Elevator and Horizontal Stabilizer - CHECK:
Fiber Glass Skin for damage or cracks
Excessive play in mounting lugs
Mounting lugs safetied?
7. Rudder and Fin - CHECK:
Fiber Glass skin for damage or cracks
Excessive play in mounting lugs
Rudder connected?
Remove Pitot tube cover!
8. Tailwheel assembly - CHECK:
Fairing for condition
Tire pressure 2.1 bar (30 psi)
9. Left wing - CHECK:
Perform same check as right wing
10. Fuel Tank Drain - CHECK:
Drain for two seconds. Inspect for dirt or water
11. Cockpit - CHECK:
Wing quick disconnects LOCKED?
Controls for freedom of movement
Required documents
12. Latching hook - CHECK:
hooks hooked into links and secured ?

30. Okt. 1986

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4
Normal Procedures

4.5 Walk around guide:



4.6 Before starting engine:

1. Canopy ---- LOCKED
2. Rudder Pedals ----ADJUSTED
3. Fuel Shutoff Valve-----OPEN
4. Controls -----FREE
5. Airbrakes -----Extend - Retract
6. Parking Brake - ON
7. Prop Control -----MOVE ONE CYCLE
8. Altimeter -----SET
9. Master Switch-----ON
10. Fuel Quantity -----CHECK
11. Baggage -----SECURE
12. Seat Harness ---- ON and LOCKED
13. Canopy -----RECHECK LOCKED

NOV. 1985

4.7 Starting Engine:

1. All Switches except Master - Off
2. Choke - Pull
3. Throttle - Open one inch
4. Boost Pump - On
5. Ignition - On
6. Propeller Area Clear - Check
7. Starter Button - Press
8. Red Warning Light - Check
9. Oil Pressure - Check, Oil pressure should be in Green Range in 10 seconds

After Engine starts release Starter Button. If Red Warning Light continues to burn after releasing Starter Button proceed with 3.13, Jamming of Starter Relay Contacts. Adjust Throttle to 1000 RPM. When engine is running smoothly - close the choke.

10. Voltmeter - Check for 14 VDC
11. Radio and NAV. Equipment - On after engine runs

Allow engine to run for two minutes at 1000 RPM, then increase RPM to 1500 until the oil temperature indicates 50°C. The 1500 RPM phase can take place during taxiing.

4.8 Before Take-Off Check:

1. Parking Brake ---ON
2. Throttle----OPEN to 2200 RPM
3. Propeller Lever----PULL and RELEASE
The propeller should now change to Cruise pitch
4. Throttle ----OPEN --MAX POWER MAX RPM 2300 !
5. Throttle-----IDLE RPM
6. Propeller Lever ----PULL AND RELEASE
The propeller should now switch back to Take-Off position
7. Throttle ----OPEN ----MAX POWER--- RPM 2700 - 2900

C A U T I O N

If the RPM setting is not obtained repeat steps 5 and 6. If a take-off is attempted with the propeller in cruise position, a significantly longer take-off roll will result!

4.9 Take-Off and Climb:

1. Parking brake --- release
2. Fuel pump --- on
3. Line up in Position
4. Trim ---SET
5. Throttle -----FULL POWER (Not less than 2700 RPM)
6. Control Stick --- Light forward pressure, steer with rudder at about 80 km/h (50 mph). The aircraft will fly itself from the runway.
7. Controls & Trim ---ADJUST to obtain climb speed of 95 km/h (59 mph) (Blue line)
8. Fuel Pump ---At 350 feet ---OFF
9. Engine instruments ----CHECK

4.10 Cruise:

To change propeller position from Take-Off to Cruise the RPM must be between 2000 and 2200. Pull and release the propeller control. A 500 RPM drop should occur without throttle adjustment. The throttle can then be opened for Cruise power (2500 - 3000 RPM) as required.

NOTE

In the cruise mode the throttle can be reduced by 1/3 for fuel economy without a noticeable loss of airspeed.

4.11 Engine Shut-down and Restart in flight:

SHUT-DOWN

1. Throttle ---Close to IDLE (for 2 minutes)
2. All electrical equipment not needed --- OFF
3. Propeller control PULL - TURN LEFT
The propeller is now feathered and the windmilling effect on the engine will cease.
4. Ignition - OFF

RESTART

1. Choke (with cold engine) ---PULL
2. Ignition ---- ON
3. Propeller Control --- TURN TO START POSITION
The windmilling effect should cause the engine to start. Should the speed not produce the windmilling use the starter to effect RPM.
4. Red Warning Light - CHECK
If the Red Warning Light continues to burn after releasing the starter button proceed 3.13, Jamming of Starter Relay Contacts.
5. Throttle ---IDLE (until oil temperature indicates 50° C). To return to cruise flight the propeller control must be again set as in Par. 4.10.

4.12 Soaring:

When updrafts are encountered reduce power to idle. If positive vertical velocity, shutt off engine as in Par. 4.11

Circle climb while maintaining a speed of 90- 95 km/h (56 - 60 mph). To return to powered flight refer to Par. 4.11.

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4
Normal Procedures

4.13 Permitted Aerobatic Manoeuvres:

ALL AEROBATIC MANOEUVERS INCLUSIVE SPIN AND FLIGHTS IN
CLOUDS ARE FORBIDDEN

4-10

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4
Normal Procedures

4.14 Decent and Approach:

Decent with power as required to obtain 180 km/h (112 mph).
When entering pattern the propeller should be switched to
START position. When turning base leg reduce power to bring
the RPM under 1500 RPM.
On final electric Boost Pump - ON, Airspeed - 95 km (60 mph),
Yellow Triangle.

4.15 Landing:

Airspeed - Reduce
Airbrakes - as required
Throttle - Closed
Touchdown - Back pressure on stick to produce
3 point attitude

C A U T I O N

Do not apply full airbrake at touchdown. The
coupling with the brake system will result in
landing with blocked wheels!

4.16 Engine Shut-Down:

Parking Brake - As required
Throttle - closed (idle engine for 2 minutes for cooling)
Radios and NAV. Equipment - Off
Electrical Switches - Off
Ignition - Off
Master switch - Off

C A U T I O N

If, due to taxiing the brakes have been used excessively,
over-heating may result. Do not set the parking brakes until
the brakes have cooled.

35 Nov 85

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H 36 DIMONA

4
Slip

4.17 Slip:

4.17.1 Entry and Recovery:

Slip is practicable from 80 km/h (43 kt) (50 mph) to 120 km/h (65 kt) (75 mph).

- Throttle idle
- Apply aileron control in direction of intended slip.
- Apply opposite rudder simultaneous.
- To maintain desired airspeed apply aft stick.
- Use airbrakes additionally if required.

Recover:

- Reset controls in neutral position.

4.17.2 Characteristics:

Yaw up to 35° and bank up to 10° are practicable with full rudder and suitable aileron control. High yaw angles require extensive elevator deflections up to the rear stop of the stick.

N O T E

Stall is not possible in the slip. At rear C.G. positions, nose pitches down slowly. Speed after recovery is not less than 80 km/h (43 kt) (50 mph).
--

Rates of descent from 3 m/s (600 ft/min) to 8 m/s (1600 ft/min) are attainable dependent on airspeed and yaw.

13. Nov. 1995

4.17.2 Characteristics cont.:

At low airspeeds and high yaw angles rudder control force reversal may occur. Recover force does not exceed 20 N (4 pounds). If aileron control is reset to neutral, rudder returns to neutral without assistance.

N O T E

Bank angles above 10° cause a turn in slip direction. Airspeeds above 120 km/h (65 kt) (75 mph) cause the same effect.

C A U T I O N

Due to high rates of descent recover from slip at least 20 m (60 ft) above ground level !

4.17.3 Indicated Airspeed Errors:

At yaw angles below 25° indicated airspeed error does not exceed 12% of CAS.

At higher yaw angles airspeed indication is no longer interpretable due to wing wake on the pitot static tube.

15 Nov 1995

Hoffmann
H 36 DIMONA

5
Performance Data

Table of Contents

Section 5

PERFORMANCE DATA

Paragraph	Page
5.1 Take-Off Distances	35
5.2 Landing Distances	36
5.3 Rate of Climb	36
5.4 Cruise Speed	36
5.5 Range	36
5.6 Fuel Consumption	36
5.7 Maximum Altitude	37

15. Nov. 1985

Hoffmann
H 36 DIMONA

5
Performance Data

5.1 Take-Off Distance:

All figures are based on ICAO standard atmosphere, Gross Weight of 770 kg (1698 lbs). Airfield conditions: calm wind, dry flat surface with short grass.

Take-Off speed: 80 km/h IAS (50 mph)
Climb speed: 85 km/h IAS (53 mph)

Field Elev.		Outside Air Temp. C				
		-15	0	+15	+30	
Take-Off roll until lift off	(mtr)	ft.				
	0	0	m 185 ft 607	196 643	207 679	218 715
	250	810	m 191 ft 267	202 663	213 699	224 735
	500	1625	m 197 ft 646	208 682	220 722	231 758
	750	2438	m 203 ft 666	215 705	227 745	238 781
Take-Off Distance to clear 15 mtr (50 ft) obstacle	1000	3250	m 209 ft 686	221 725	234 768	246 807
	0	0	m 305 ft 1001	333 1043	361 1184	389 1276
	250	810	m 320 ft 1050	348 1142	375 1230	403 1322
	500	1625	m 334 ft 1096	362 1188	391 1283	419 1375
	750	2438	m 349 ft 1145	378 1240	406 1322	434 1424
	1000	3250	m 363 ft 1191	394 1293	426 1398	457 1499

15. Nov. 1985

Hoffmann
H 36 DIMONA

5
Performance Data

5.2 Landing Distances:

All figures are based on ICAO atmosphere, Gross Weight of 770 kp (1698 lbs). Airfield conditions: Calm wind, dry, flat surface, with short grass.

Approach speed - 95 km/h (60 mph) Yellow Triangle Marking

Touchdown speed - 70 -75 km/h (44 -46 mph)

Landing Roll - 198 mtr (643 ft)

Landing Distance

(over 50 ft obstacle) - 378 mtr (1.228 ft)

5.3 Rate of Climb:

Rate of climb, propeller in START position

95 km/h (60 mph) IAS 2.8 m/s 532 fpm

Rate of climb, propeller in CRUISE position

120 km/h (75 mph) IAS 2.0 m/s 394 fpm

5.4 Cruise speed:

At maximum continuous RPM (3000 RPM)

Straight and Level Flight - 190 km/h (118 mph)

5.5 Range:

At a cruise speed of 180 km/h

the range is 960 km with no reserve.

Wind factor is not considered.

At a cruise speed of 160 km/h at an altitude

of 1.500 mtr (5000 ft) the range is 1000 km

with no reserve. Wind factor is not considered.

5.6 Fuel Consumption:

At an altitude of 1.500 m (5.000 ft) the fuel consumption

is: 150 km/h - 12 l/h (3.16 US Gal)

180 km/h - 15 l/h (3.95 US Gal)

C A U T I O N

The fuel quantity indicator has an error factor of
+ 10 %. Take-Off with less than 1/4 tank indication
is prohibited!

15. Nov. 1985

Hoffmann
H 36 DIMONA

5
Performance Data

5.7 Maximum Altitude:

Aircraft weight; 770 kg, ICAO standard atmosphere.

The DIMONA has demonstrated the ability to climb
to 5.500 m NN (18.045 ft).

15. NOV. 1965

Hoffmann
H 36 DIMONA

6
Weight & Balance
Equipment list

Table of contents

Section 6

WEIGHT AND BALANCE EQUIPMENT LIST

Paragraphs:	Page
6.1 Empty Weight	39
6.2 Reference Datum Line and CG Limits	39 - 42
6.3 Weight Report	43
6.4 Minimum Equipment List (incl. in fleet weight)	44
6.5 Additional Equipment list	44

15 Nov. 1985

Hoffmann
H 36 DIMONA

6
Weight & Balance
Equipment list

6.1 Empty Weight:

The DIMONA is weighed at the factory after the minimum equipment and extra accessories have been installed. The weight and the empty weight CG is entered upon the weight report found in Par. 6.3. Should, at some time the aircraft be repaired, or additional equipment added, the aircraft should be reweighed to adjust the weight report accordingly. After removing or adding equipment a sample weight & balance problem should always be performed to insure the CG limits have not been exceeded.

6.2 Reference Datum Line (RDL) and CG Limits:

The reference datum line (RDL) is the leading edge of the wing at the wing root rib. The aircraft leveling point is the underside of the wing, mid chord.. The CG Limits are measured in mm from the RDL aft.

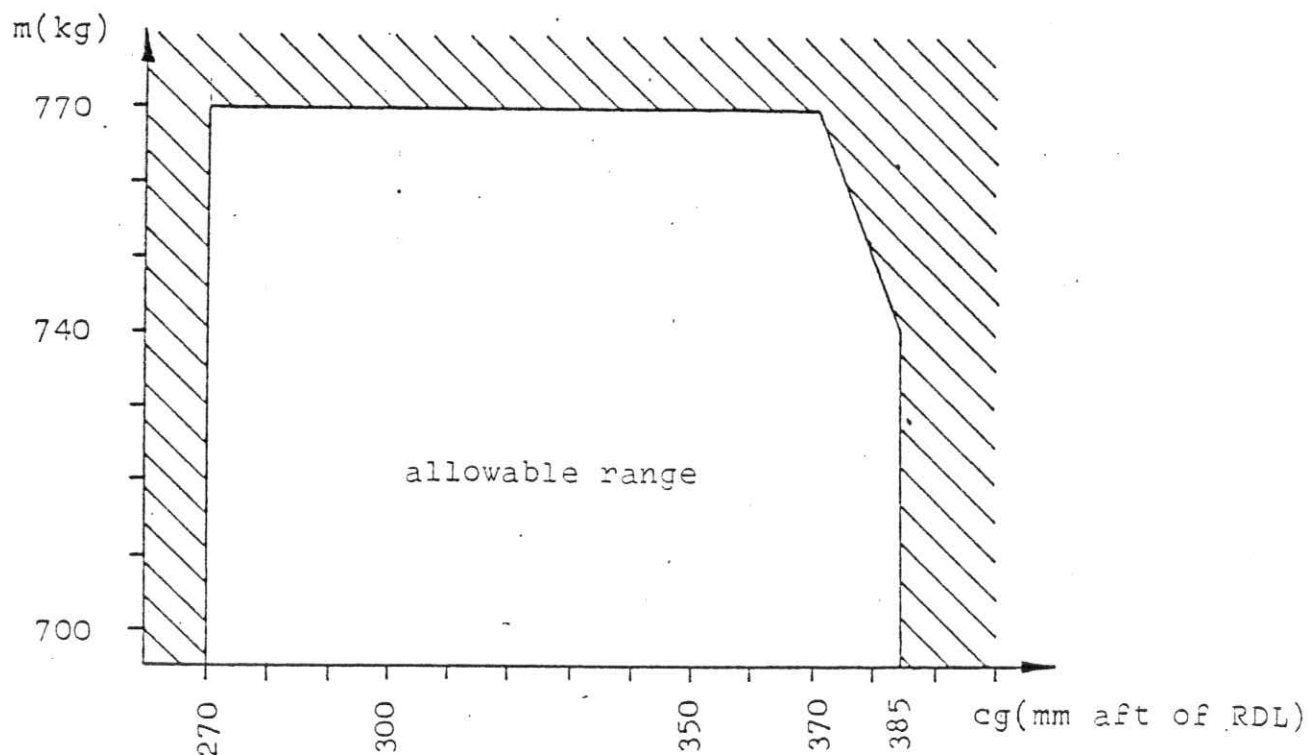
Forward CG Limit: 270 mm

Aft CG Limit :

- Up to 740 kg: 385 mm

- At 770 kg: 370 mm

Between 740 and 770 kg linear run between 385 and 370 mm.



15. Nov. 1985

Hoffman
H 36 Dimona

6
Weight & Balance
Equipment list

Sample Problem: Pilot 80 kg, Co-Pilot 100 kg,
Baggage 10 kg, Empty Weight 520kg
Empty Weight CG 340 mm, Fuel 80ltr/57,6kg

	Arm (mm)	Weight (kg)	Moment (kg.mm)
Empty Weight	340	520	176.800
1. Pilot	143	80	11.440
2. Pilot	143	100	14.300
Baggage	834	10	8.340
Fuel	834	57,6	48.038
		767,6	258.918

The result of the above problem places the CG at 337,3 mm which is within the allowable range. An additional problem may be calculated, for example, that all the fuel is consumed and the aircraft will continue to fly and land as a glider. By removing the 57,6 kg of fuel and the moment, the resultant CG will be 297 mm, still within the allowable CG range.

15. Nov. 1985

Hoffmann
H 36 DIMONA

Weight & Balance
Equipment list

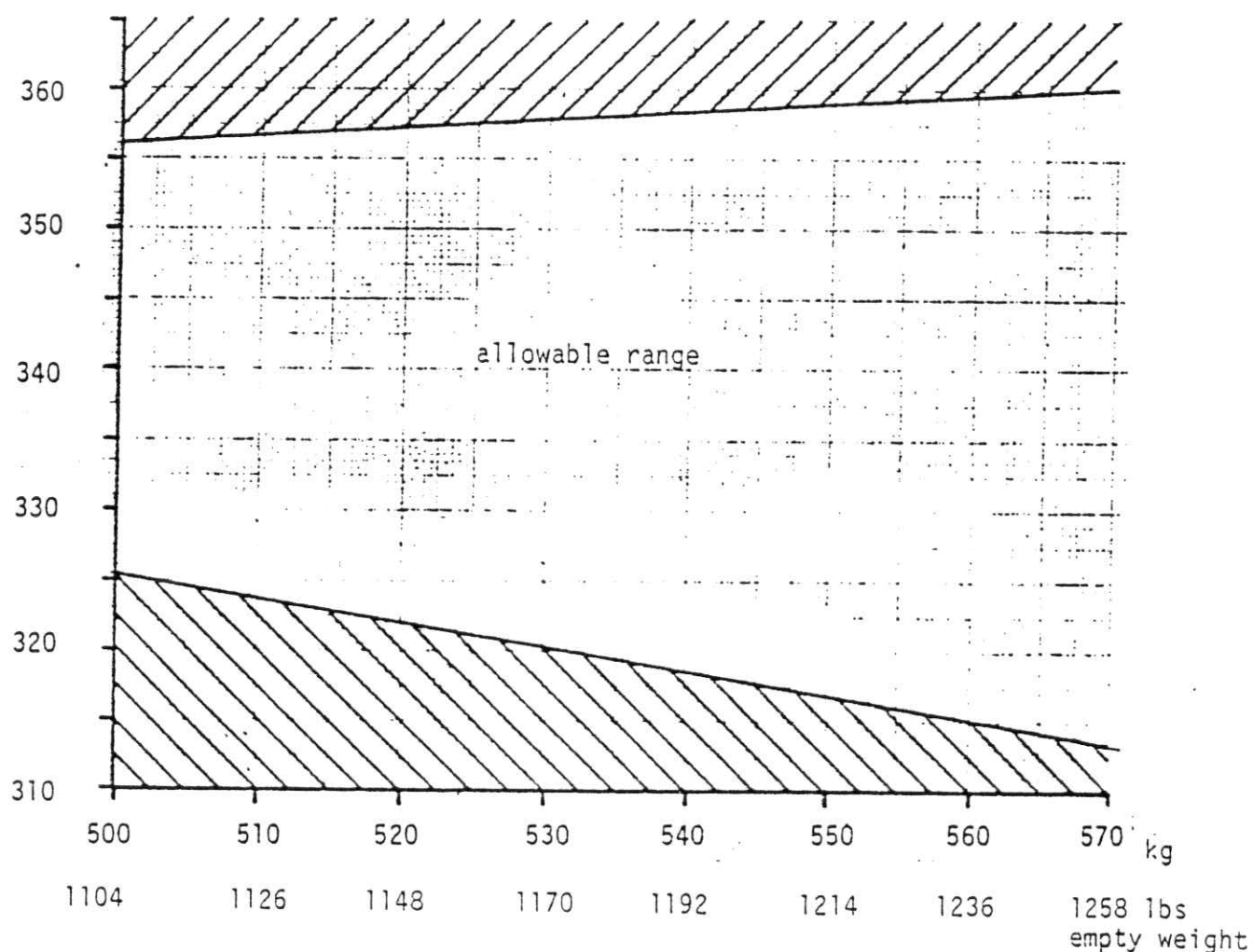
6

6.2. cont.

Empty weight CG limits:

With a min. weight of 70 kg (155 lbs) in pilot's seat, the CG will be within the allowable range, if the empty weight CG is within the limits shown below:

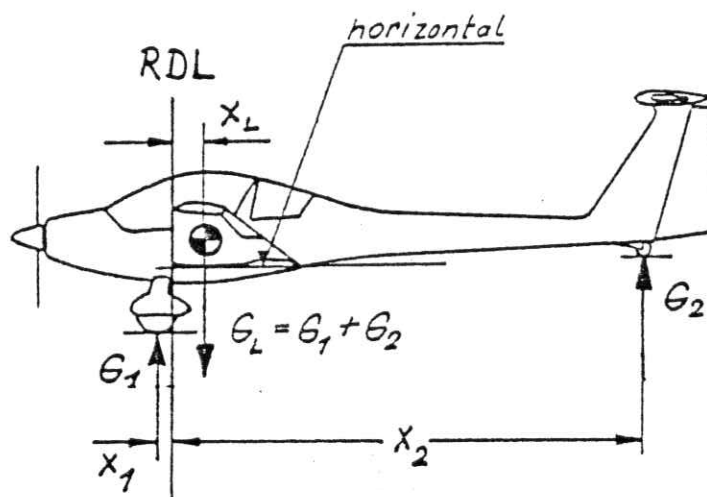
Empty weight CG
(mm aft of RDL)



15 Nov 1988

6.2. cont

Determination of empty weight CG position:



Put x_1 and x_2 with their absolute value in mm into the formula :

$$x_L = \frac{x_2 \cdot G_2 - x_1 \cdot G_1}{G_1 + G_2} \quad [\text{mm}]$$

where:

x_L is the empty weight CG position in mm aft of RDL (reference datum line).

15. Nov. 1985

6.3 Weighing Report:

Date of weighing carried out by:	Equipment first used for weigh. (date)	Empty weight kg(lbs)	Empty C of G (behind datum) mm/in.	Empty weight moment.	Max. Payload kg(lbs)	Sign

The empty weight momentum is necessary to calculate the CG for flight (load table).

13 Nov 1985

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H 36 DIMONA

Weight & Balance
Equipment List

6.4 Minimum equipment List:

The minimum installed equipment, installed at the factory consists of the following:

1. Airspeed indicator
2. Altimeter
3. RPM indicator with hourmeter
4. Oil Pressure Indicator
5. Oil Temperatur Indicator
6. Cylinder Head Temperatur Gauge
7. Fuel Quantity Indicator
8. Voltmeter
9. Standby Compass
10. Two seats, restraint harness
11. Loading Plan
12. Data Plate
13. Flight Handbook

6.5 Additional Equipment List:

Item	Arm (mm)	Weight (kg)	Moment (kg.m)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			

4 E 1111 1005

Hoffmann

7

H 36 DIMONA

Systems Discription

SECTION 7

7.1 Cockpit Discription:

1. Instrument board:

Is in three sections, the flight instruments are on the left, engine instruments on the right, and tilted for better viewing. The center console is for the installation of COM and NAV equipment. The main switch ON position is down and OFF when turned to the right.

2. Control Stick:

One stick for each seat, with built-in microphone switch.

3. Air Brakes:

The airbrake levers are colored blue and are on the left cockpit side and the middle console. The levers have no down lock due to spring loading.

4. Rudder Pedals:

Two seats, left and right. Pulling the adjusting handle forward of the control stick, and pushing with the feet against the pedals permits forward adjustment. To move pedals aft, pull handle and let pedals snap into the desired rear position.

5. Cockpit Heat:

Pulling the knob permits heat entry thru the cabin heat duct.

6. Choke:

The choke knob closes butterfly valves in both carburetors thru cables. It must not be used to shut down the engine, and under no circumstances should a takeoff be attempted when the choke knob is activated!

7. Throttle Lever:

The throttle lever is on the lower middle console next to the Air Brake Lever. Full throttle = Lever full forward.

8. Trim:

The trim lever (coloured green) is behind the throttle on the middle lower console. To effect trim move lever to the left to clear locking lugs and move in desired trim direction, i.e. lever forward - nose down, lever aft - nose up.

8. Parking Brake:

Is located next to the trim lever on the lower middle console. To engage parking brakes pull firmly on the air brake lever, and move then park brake lever aft. Release air brake lever. To release the park brake, again pull firmly on the air brake lever and move the park brake lever forward. Pulling on the airbrake lever alone will not engage or disengage the brakes and will damage the partening brake mechanism!

9. Canopy Lock:

Are red levers located left and right on the canopy frame. To close the canopy push shut with the black grips located on the canopy frame, then turn the red levers to lock the canopy. To open the canopy reverse the sequence.

10. Emergency jettison:

The red levers are located left and right on the canopy frame. For use review Emergency Procedures, Par. 3.12.

11. Propeller Control:

The propeller control lever is on the upper middle console. For use review Normal Operations, Par. 4.8.

12. Fuel Shut-Off:

Located on the lower rear, middle console. The valve is open when positioned to line of flight (fore and aft).

13. Seat Adjustment (special equipment)

To adjust for height, pull seat up and reset in lugs to the desired height. To adjust for tilt, seatback pulled forward, and reset the horizontal tube in the desired lugs. Push seat back to original position.

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H 36 DIMONA

Aircraft Handling⁸
and Servicing

Table of Contents

Section 8

AIRCRAFT HANDLING AND SERVICING

Paragraph	Page
8.1 Aircraft Assembly	48 - 49
8.2 Aircraft Disassembly	50
8.3 Transporting the Aircraft	50
8.4 Storage	51
8.5 Cleaning the Aircraft	51

11 FEB 1955

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H 36 DIMONA

8
Aircraft Handling
and Servicing

8.1 AIRCRAFT ASSEMBLY:

1.

Inspect all bolts and bushings for condition and apply a light coat of grease.

- WINGS -

2.

Move the trim lever to full NOSE DOWN position
Open latching - hooks.

3.

Place the mounting lever on the mounting lug, located in the rear middle console

4.

Unhook the wing (either wing) from its hanging mount. By holding it by the wing tip pull the wing outboard on its carrying tube

5.

Then walk forward until the wing is 90° from line of flight

6.

Rotate the wing until the root ribs are parallel and push wing into fuselage. An assistant at the wing trailing edge should observe the smooth insertion of the two shear bolts. Let latching - hooks snap into links !

7.

Move the wing tip up and down lightly while the assistant locks the main mounting bolt by pushing up on the mounting lever. The aileron and airbrake drive units are automatically hooked up.

8.

Install the other wing in a similar manner. The wide tread of the DIMONA landing gear allow the mounted wing to support itself and it requires no outside support.

30. Okt. 1986

8-2

Hoffmann
H 36 DIMONA

.8
Aircraft Handling
and Servicing

9.

After both wings have been mounted remove the mounting lever and install the safety clip in the main mounting bolts.

- HORIZONTAL FIN & ELEVATOR -

1.

Position Fin above Vertical Fin

2.

Raise Elevator slightly and firmly, push fin aft against the stop

3.

As you push the fin aft guide the elevator drive fork into the elevator lug

4.

Lock safety pin and secure with a cotter pin

- FINAL ASSEMBLY -

1.

Plug in compensation nozzle - if desired

2.

Apply tape, if desired to gap between wing and fuselage

CAUTION

Check elevator control for proper connection and inspect elevator actuator inserted in driving fork

8.2 AIRCRAFT DISASSEMBLY:

1.

Aircraft dis assembly is performed by reversing the steps outlined in 8.1

8.3 TRANSPORTING THE AIRCRAFT:

1.

For road transportation a closed trailer should be used. The components should be cushioned and protected against slippage or free movement. Chocks for all three wheels are excellent for this purpose.

2.

The fuselage is transportable on the main gear and tail wheel. The fuselage unit should be tied down or blocked to prevent fore and aft and vertical movement. The propeller should be checked to insure enough clearance in the trailer.

3.

The wings do not have to be removed for road transportation. The wing remains attached to the fuselage by the telescopic tube. When folded, the wing should be cushioned by a 400 mm wide profile cushion under the butt rib. This will prevent the telescopic tube from damage. An additional profile cushion should be placed about 4 m (13 ft) outboard of the butt rib. The cushion should be at least 300 mm (14 in) high.

The wing should be tied down to prevent rearward movement. The rear shear bolt on the fuselage should be padded to prevent damage to the wing skin.

The horizontal fin and elevator can be placed in the trailer flat or vertically. The retaining straps or profile cushions must be cushioned or padded to prevent damage to the unit.

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8
Aircraft Handling
and Servicing

8.4 STORAGE:

For hangar storage the wings can be folded as in Par. 8.2. The wing tips can be hung from the horizontal fin with the provided support fixtures. The rear shear bolts on the fuselage should be padded to protect the wing skin.

Should the aircraft be placed in extended storage, it is recommended that profile cushions be placed under the wing as in Par. 8.3.3.

The storage room or hangar should have good air circulation in order to preclude moisture build-up.

8.5 CLEANING THE AIRCRAFT:

The entire surface of the DIMONA is painted with a weather proof two component paint. Regardless, the aircraft should be protected against excessive moisture or dampness. The aircraft should not be placed in open or unprotected storage for long periods of time.

Dirt, insects etc. can be removed by washing, using warm water and a mild detergent.

For stubborn spots an automotive paint cleaner can be used.

For best result the aircraft should be cleaned after the day's flying is ended.

The lower fuselage surfaces should be inspected for oil and exhaust stains. These can be removed with a cloth moistened with stoddard solvent or dry cleaning fluid. The areas where oil is present, i.e. breather tubes should be inspected to insure that the oil has not damaged the paint finish.

Polishing the aircraft can be done by using a good quality automotive wax. The plexiglass canopy should be washed with warm water and a mild detergent. Final cleaning is done with a chamoix or a soft cotton cloth. Do not rub or polish dry plastic!

Several good anti-static plastic cleaners are available at Aviation Supply Houses, and can be used.

13 Nov 1955

Hoffmann
H 36 DIMONA

9

Supplements

Table of Contents

Section 9

SUPPLEMENTS

Paragraph:

Page

15 NOV 1985

9-1

SUPPLEMENT NO. 1
(INDIVIDUAL WHEEL BRAKING SYSTEM)

SEE SB 42