

IMS RATING CERTIFICATE No. 53
Based on: CLUB VCG (Metric)

IMS AMENDED TO JANUARY 2004
Offshore Racing Council
Ipswich, England
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IMS AMENDED TO JANUARY 2004 VPP: 25/NOV/03 17:21:41
Cert No 53 HAN53.DAT 25/NOV/03 17:21:36
OFF Meas'd: 00/00/00 HA53DD.OFF 11/SEP/03 16:19:32

NOT VALID AFTER 12/03

---GPH---
! 559.9 !

--- YACHT DESCRIPTION ---
Name: HANSE 531 DD
Sail No: HAN 53
Class: HANSE 531 DD
LOA: 16.150m Beam(MB) 4.892m
Designer: JUDEL/VROLIJK
Builder: YZ GREIFSWALD
Rig: FRACTIONAL SLOOP 106% Jib
Keel/CB: FIXED KEEL
PropInst: EXP NO STRUT FOLDING
FwdAccom: YES SPIN: SYMMETRIC
HullCnst: HVYCORE RudCnst: STNDRD!
Forestay: ADJST AFT BoomMtl: HEAVY!
Spreadrs: 2 Sets InrFsty: FIXED!
Runners: NONE Jumpers: NONE!
Dates: AGE:0/2003 SERIES: 0/2003!
COMMENTS-----

RATING OFFICE:
Issued: 2004-BETA/2 9.11.2003
25/NOV/03 TESTCALCULATION
Measured: ***NOT PERMITTED***
02/SEP/03 ****FOR RACING*****

Revalidation Authority: D.S.V.
Measurer:

"I CERTIFY THAT I UNDERSTAND MY
RESPONSIBILITIES UNDER THE IMS."

OWNER:.....

----- LIMITS AND REGULATIONS -----
Limit of Positive Stability: MEETS REQ Measurement Inventory: 02/SEP/03
Minimum Displacem't 8164kg: MEETS REQ Accommodation Length: 15.899m
Maximum Crew Weight: 850 kg. Accom Certificate: C/R DA= 0.80%
Stability Index: 126.4 Plan Approval: NONE FILED
C/R HeavyItems Pitch Adjustm't 0.00000 Anchor(s) Weight: 0 Dist: 0.00
Applied Age Allowance: 0.05%

NOTE TO OWNER: The range available to revise crew weight is 855-1578 kg.

----- TIME ALLOWANCES IN SEC/MI BY TRUE WIND VELOCITY & ANGLE -----
(NOT WIND-AVERAGED)

Wind Velocity:	6kt	8kt	10kt	12kt	14kt	16kt	20kt	CHECKSUM
BEAT ANGLES:	45.6	43.6	44.1	42.7	41.2	40.3	39.6	(297.1)
BEAT VMG:	1025.7	823.0	715.0	657.8	626.7	608.0	591.1	(5047.3)
52 :	651.0	530.9	464.1	436.4	423.6	415.6	407.5	(3329.1)
R 60 :	603.3	493.7	441.1	417.1	405.2	398.3	390.7	(3149.4)
E 75 :	566.8	466.6	422.2	402.1	386.9	377.1	368.1	(2989.8)
A 90 :	537.2	441.4	405.6	386.8	377.2	370.7	355.4	(2874.3)
C 110 :	546.9	449.4	410.9	387.5	369.9	356.5	340.0	(2861.1)
H 120 :	583.0	472.4	423.1	396.0	375.9	359.4	333.8	(2943.6)
135 :	683.8	542.6	459.5	419.5	394.6	375.3	344.0	(3219.3)
150 :	827.7	643.1	537.8	466.0	425.9	400.6	364.5	(3665.6)
RUN VMG:	955.8	742.6	621.0	537.7	481.9	443.2	395.2	(4177.4)
GYBE ANGLES:	140.6	144.9	146.4	151.7	160.8	167.4	172.5	(1084.3)

NOTE: To convert any time allowance above to speed in knots: Kt = 3600/TA

----- TIME ALLOWANCES FOR SELECTED COURSES (AFTER WIND-AVERAGING) -----

Wnd/Lwd VMG	1007.1	795.1	677.4	606.0	561.1	531.6	498.3	(4676.6)
CircularRandom	793.0	630.5	541.7	489.2	456.5	435.1	408.6	(3754.6)
Ocean for PCS	891.0	690.1	575.2	503.0	454.6	420.7	375.2	(3909.8)
Non-Spinnaker	878.3	690.8	586.1	522.7	482.1	455.3	423.0	(4038.3)

----- SIMPLIFIED SCORING OPTIONS -----

Time-on-Distance	Time-on-Time	Performance Line
(sec/mi)	TMF	PLT PLD
! OFFSHORE 559.9 (=GPH)	1.0716 (=600/GPH)	0.780 27.9 (Ocean)
! INSHORE 633.4 (=ILC)	1.0657 (=675/ILC)	0.938 189.8 (Olympic)
! Performance Line Corrected Time = (PLT x Elapsed Time)-(PLD x Distance) !		

-----CENTERBOARD AND DRAFT-----
ECM 0.000 CBRC 0.000 CBMC 0.000 CBTC 0.000
WCBA 0.0 CBDA 0.000 KCDA 0.000 ECE 0.000
WCBB 0.0 CBDB 0.000 ENDPLATE ADJ (KEDA) 0.000

-----PROPELLER AND INSTALLATION-----
PRD 0.550 PBW 0.160 PHD 0.112 PHL 0.220 ESL 0.360
ST1 0.000 ST2 0.000 ST3 0.000 ST4 0.000 ST5 0.445
PSA 19.000 PSD 0.045 PIPA 0.0035

-----FLOTATION DATA-----
FFPS 1.798 AFPS 1.473 SFFP -0.100 SAFFP 14.521
FFM 1.770 FAM 1.440 FFPV 0.000 AFPV 0.000
FF 1.785 FA 1.450 RMst 664.8 SG 1.000

-----INCLINING TESTS-----

No inclining test was performed. Club righting
moment is based on class standard vertical center of
gravity of 0.130 to the offset file datum.

SMB 10.366
RM2 673.6 RM20 591.0 RM40 448.9 RM60 307.2
RM90 123.8 WBV 0.0 CREW ARM (CRA) 2.103

CALCULATED LIMIT OF POSITIVE STABILITY: 115.1 DEGREES
RATIO STABILITY CURVE AREAS, POSITIVE/NEGATIVE 2.524

-----HYDROSTATICS-----MEASUREMENT TRIM--SAILING TRIM--

KEEL DRAFT (DHK0) 2.820 (DHKA) 2.851
2ND MOMENT LENGTH (LSM0) 14.899 (LSM1) 15.091
DISPLACEMENT (WEIGHT) (DSPM) 21072 (DSPS) 22416
WETTED SURFACE (WSM) 59.56 (WSS) 61.15
VCG FROM OFFSETS DATUM (For CLUB RM) (VCGD) 0.130
VCG FROM MEASUREMENT TRIM WATERLINE (VCGM) 0.111
INTEGRATED BEAM ATTENUATED WITH DEPTH (B) 4.517
MAXIMUM SECTION AREA (AMS1) 2.920
BEAM/DEPTH RATIO (BTR) 4.631
EFFECTIVE DRAFT (D) 2.431
2 DEG HEEL (LSM2) 15.110 25 DEG HEEL (LSM3) 15.639
SUNK (LSM4) 17.116 AVG LENGTH (L) 15.113
TRIM: 1mm/35.154m-kg SINK: 1mm/44.864kg

SAIL AREAS: MAIN+FORE+MIZZEN: 143.75 MAIN: 80.07
GENOA: 70.68 SYM: 225.68 ASYM: 0.00 MIZ'N: 0.00

-----FORETRIANGLE-----MAIN & SPARS-----

IG	21.050	SPL	6.000	HB	0.180	TH	NO
MW	0.300	J	6.000	MGT	1.27	TL	0.000
GO	0.350	LPG	6.32	MGU	2.35	MDT1	0.245
ISP	21.300	FSP	0.088	MGM	4.10	MDL1	0.380
IM	21.227	LP	6.41	MGL	5.46	MDT2	0.245
HBI	1.560	JR	0.00	MSW	0.0	MDL2	0.380
SFJ	0.190			P	21.100	MWT	610.0
MSL	21.02	MSF	10.80	E	6.300	MCG	7.000
SL	21.20	ASL		EC	6.308	BD	0.290
SMW	11.50	AMG		BAS	2.100	CPW	0.000
SF	10.80	ASF		SPS	0.000	BAL	0.000

-----MIZZEN-----

IY	0.000	PY	0.000	HYB	0.000	TLY	0.000
EB	0.000	EY	0.000	MGTY	0.000	MDT1Y	0.000
YSD	0.00	ECY	0.000	MGUY	0.000	MDL1Y	0.000
YSF	0.00	BASY	0.000	MGMY	0.000	MDT2Y	0.000
YSMG	0.00	BALY	0.000	MGLY	0.000	MDL2Y	0.000
		HBIY	0.000	BDY	0.000		