

IMS RATING CERTIFICATE No. 140059
Based on: FULL MEASUREMENT (Metric)

IMS AMENDED TO JANUARY 2001
Offshore Racing Council
Southampton, England
Copyright 2001

IMS AMENDED TO JANUARY 2001 VPP: 11/JUN/01 10:03:31
Cert No 140059 AUT2538.DAT 10/JAN/02 10:00:03
OFF Meas'd: 19/AUG/51 GDSURP.BOF 10/JAN/01 13:24:30

NOT VALID AFTER 31/DEZ/01

--GPH--
! 594.8 !
! ----- !

--- YACHT DESCRIPTION --- RATING OFFICE:
Name: SHUBIDU 3 ! Issued: DEUTSCHER SEGLER-VERBAND
Sail No: AUT 2538 ! 11/JUN/01 GRUENDGENSSTR 18
Class: GRAND-SURPRISE ! Measured: 22309 HAMBURG
LOA: 9.550m Beam(MB) 2.988m ! 24/APR/01
Designer: JOUBERT - NIVELT !
Builder: ARCHAMBAULT ! Revalidation Authority: D.S.V.
Rig: FRACTIONAL SLOOP 150% Jib ! Measurer: DOMMERMUTH
Keel/CB: FIXED KEEL !
PropInst: EXPOSED FOLDING ! "I CERTIFY THAT I UNDERSTAND MY
FwdAccom: YES SPIN: SYMMETRIC ! RESPONSIBILITIES UNDER THE IMS."
HullCnst: SOLID RudCnst: STNDRD!
Forestay: ADJST AFT BoomMtl: HEAVY ! OWNER:.....
Spreadrs: 2 Sets InrFsty: NONE ! DR. ULRIKE LINTNER
Runners: NONE Jumpers: NONE ! NACHBAUERSTR. 13
Dates: AGE:1/2001 SERIES : 6/2000 ! A-6850 DORNBIRN
COMMENTS----- ! BSC
BAU NR FR-ARC-90031A101

----- LIMITS AND REGULATIONS -----
Limit of Positive Stability: MEETS REQ Measurement Inventory: 24/APR/01
Minimum Displacem't 2588kg: MEETS REQ Accommodation Length: 9.550m
Maximum Crew Weight: 400 kg. Accom Certificate: C/R DA= 0.00%
Stability Index: 111.0 Plan Approval: NONE FILED
C/R HeavyItems Pitch Adjustm't 0.00000 Anchor(s) Weight: 0 Dist: 0.00
Optional Age Allowance: 0.05%
NOTE TO OWNER: The range available to revise crew weight is 358- 661 kg.

TIME ALLOWANCES IN SEC/MI BY TRUE WIND VELOCITY & ANGLE
Wind Velocity: 6kt 8kt 10kt 12kt 14kt 16kt 20kt CHECKSUM
BEAT ANGLES: 43.4 42.3 40.6 39.5 39.0 38.9 39.5 (283.2)
BEAT VMG: 966.4 836.2 774.5 743.2 726.3 718.3 717.1 (5482.0)
52 : 624.2 553.3 524.5 509.5 501.0 496.0 491.6 (3700.1)
R 60 : 582.4 525.0 501.2 487.9 479.9 474.6 468.7 (3519.7)
E 75 : 550.9 496.2 473.8 460.4 451.5 444.9 435.7 (3313.4)
A 90 : 547.7 492.2 460.3 441.1 429.5 420.5 405.9 (3197.2)
C 110 : 542.1 481.6 453.7 437.0 422.6 409.0 379.3 (3125.3)
H 120 : 564.3 491.5 453.3 427.7 408.7 389.3 344.9 (3079.7)
135 : 660.6 537.3 480.3 442.5 409.9 369.4 308.4 (3208.4)
150 : 800.1 634.5 544.8 490.0 452.0 419.8 338.5 (3679.7)
RUN VMG: 923.9 732.6 629.1 559.4 507.4 469.2 390.9 (4212.5)
GYBE ANGLES: 140.6 143.2 149.1 160.6 164.6 166.1 149.6 (1073.8)

NOTE: To convert any time allowance above to speed in knots: Kt = 3600/TA
----- TIME ALLOWANCES FOR SELECTED COURSES -----
Wnd/Lwd VMG 1039.2 840.4 733.0 668.8 627.2 597.6 554.1 (5060.3)
Ocean for PCS 925.0 728.8 618.0 548.5 501.0 465.7 413.7 (4200.7)
Non-Spinaker 897.1 723.7 629.7 573.9 538.6 514.7 483.8 (4361.5)

----- SIMPLIFIED SCORING OPTIONS -----
! Time-on-Distance Time-on-Time Performance Line
! (sec/mi) TMF PLT PLD !
! OFFSHORE 594.8 (=GPH) 1.0087 (=600/GPH) 0.798 71.7 (Ocean) !
! INSHORE 666.9 (=ILC) 1.0121 (=675/ILC) 0.996 283.5 (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 0.406 PBW 0.111 PHD 0.000 PHL 0.110 ESL 0.820
ST1 0.016 ST2 0.075 ST3 0.082 ST4 0.047 ST5 0.167
PSA 16.000 PSD 0.025 PIPA 0.0016

-----FLOTATION DATA-----
FFPS 1.000 AFPS 0.728 SFFP 0.200 SAFFP 9.050
FFM 0.960 FAM 0.702 FFPV 0.000 AFPV 0.000
FF 0.967 FA 0.705 SG 1.000

-----INCLINING TESTS-----
W1 12.000 PD1 64.000 PLM 2030.000 PL 2005.651
W2 24.000 PD2 129.000 GSA 78.000 RSA 6425.0
W3 36.000 PD3 196.000 SMB 6.090 WD 10.270
W4 48.000 PD4 260.000 RM 66.5 RMC 66.5
RM2 69.1 RM20 61.7 RM40 47.2 RM60 29.9
RM90 11.9 CREW ARM (CRA) 1.174

CALCULATED LIMIT OF POSITIVE STABILITY: 115.0 DEGREES
RATIO STABILITY CURVE AREAS, POSITIVE/NEGATIVE 2.458
-----HYDROSTATICS-----MEASUREMENT TRIM--SAILING TRIM--
KEEL DRAFT (DHK0) 2.072 (DHKA) 2.111
2ND MOMENT LENGTH (LSM0) 9.267 (LSM1) 9.628
DISPLACEMENT (WEIGHT) (DSPM) 2650 (DSPS) 3250
WETTED SURFACE (WSM) 18.58 (WSS) 20.03
VCG FROM OFFSETS DATUM (For CLUB RM) (VCGD) -0.104
VCG FROM MEASUREMENT TRIM WATERLINE (VCGM) -0.131
INTEGRATED BEAM ATTENUATED WITH DEPTH (B) 2.352
MAXIMUM SECTION AREA (AMS1) 0.694
BEAM/DEPTH RATIO (BTR) 5.226
EFFECTIVE DRAFT (D) 1.883
2 DEG HEEL (LSM2) 9.640 25 DEG HEEL (LSM3) 9.680
SUNK (LSM4) 10.336 AVG LENGTH (L) 9.456
TRIM: 1mm/6.900m-kg SINK: 1mm/14.401kg

SAIL AREA: MAIN + FORETRIANGLE + MIZZEN (SA) 57.29
MAIN: 34.87 SPIN: 100.36 GENOA: 34.85 MIZ'N: 0.00

-----FORETRIANGLE-----MAIN & SPARS-----
IG 13.095 SPL 3.930 HB 0.145 TL 0.890
MW 0.158 J 3.410 MGT 0.90 MDT1 0.106
GO 0.173 LPG 5.13 MGU 1.64 MDL1 0.158
ISP 13.200 FSP 0.000 MGM 2.87 MDT2 0.074
IM 13.153 LP 5.13 MGL 3.77 MDL2 0.111
HBI 0.754 SFJ 0.130 MSW 17.8 MWT 91.5
MSL 12.95 MSF 0.00 P 13.150 MCG 5.100
SL 13.10 SMW 8.20 E 4.500 BD 0.146
SPS 1.560 SF 8.00 EC 4.500 CPW 2.040
TH NO JR 0.00 BAS 1.350 BAL 0.152

-----MIZZEN-----
IY 0.000 PY 0.000 HBY 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 MGYM 0.000 MDT2Y 0.000
YSMG 0.00 BALY 0.000 MGLY 0.000 MDL2Y 0.000
HBIY 0.000 BDY 0.000