

HEELING FORCES

THIS DIAGRAM REFLECTS THE CONDITIONS APPLICABLE TO CATAMARANS AND IS NOT APPROPRIATE FOR CONSIDERATION OF BALLASTED MONOHULL VESSELS.

TYPICALLY THE SPAR AND RIGGING LOADS FOR CATAMARANS ARE 1.5 TIMES HIGHER THAN FOR MONOHULLS OF SIMILAR SAIL AREA DUE TO THEIR HIGH RESISTANCE TO HEELING

MAST COMPRESSION
= HEELING MOMENT / HEELING ARM
= 192,000ft.lb. / 10.5ft.
= 18,285 lb.
TIMES SAFETY FACTOR OF 3,
USE 55,000 lb. FOR MAST AND BULKHEAD DESIGN

SAFETY FACTOR ACCOUNTS FOR:
INERTIAL LOADS,
EXTREME CONDITIONS
VARIATIONS IN VESSEL WEIGHT,
MATERIAL PROPERTY VARIATIONS

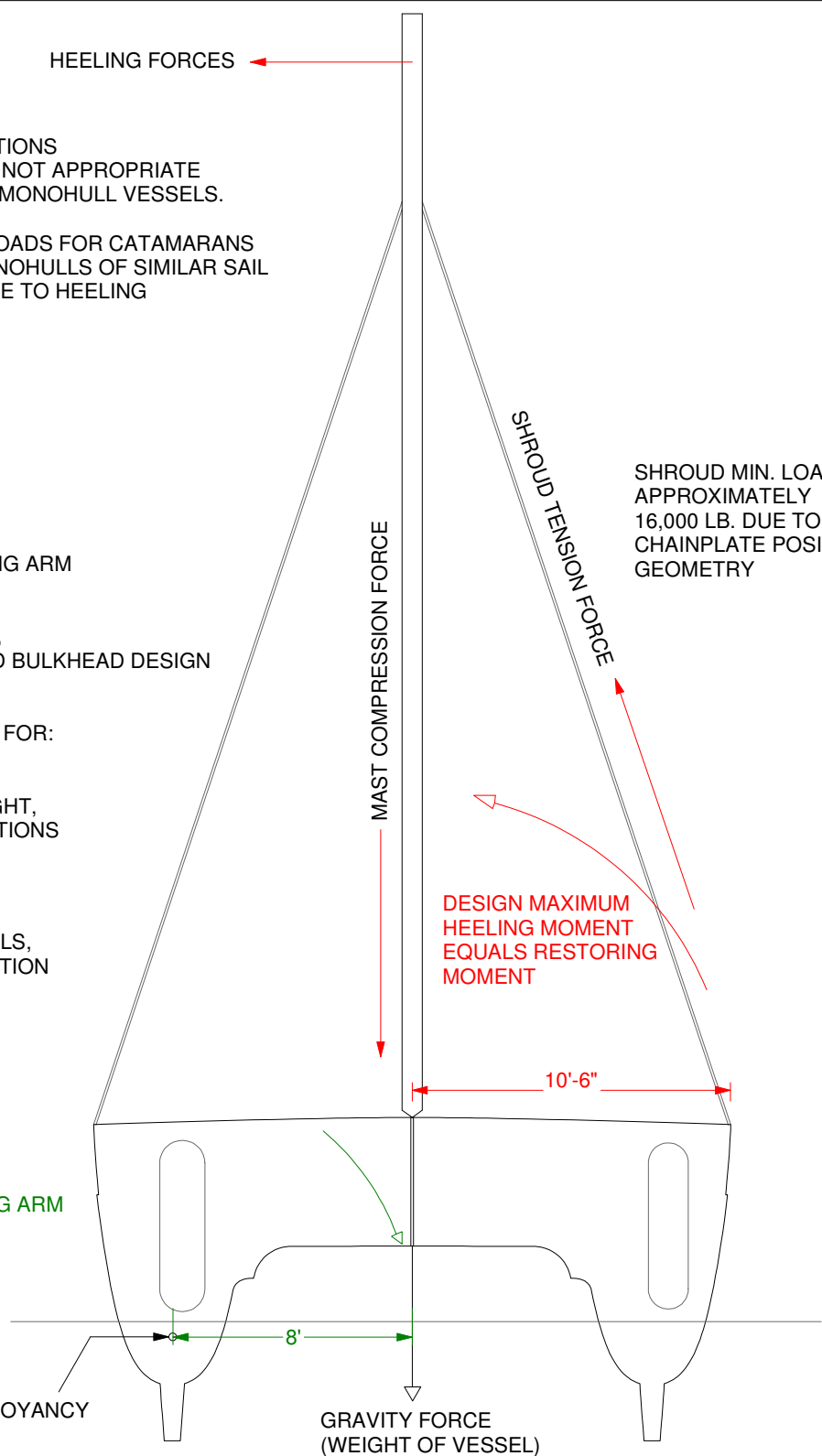
MAST DESIGN CONSIDERS:
COMPRESSION LOADS,
BENDING LOADS DUE TO SAILS,
INERTIAL LOADS DUE TO MOTION

SHROUD MIN. LOAD IS APPROXIMATELY 16,000 LB. DUE TO CHAINPLATE POSITION GEOMETRY

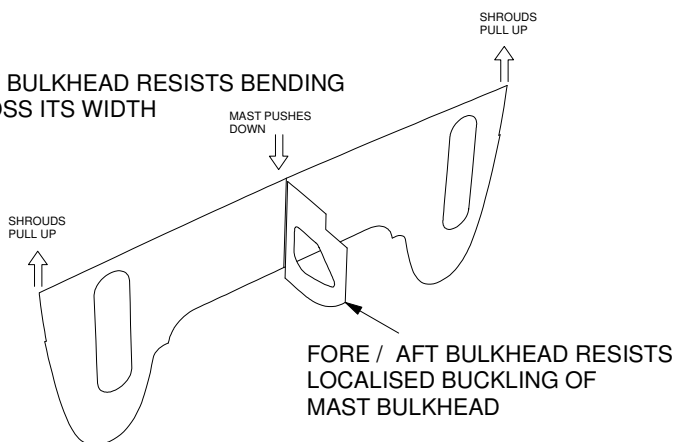
RESTORING MOMENT
= VESSEL WEIGHT X RIGHTING ARM
= 24,000 lb. X 8 ft.
= 192,000 ft.lb.

HEELING PIVOT IS CENTRE OF BUOYANCY ON HULL CENTRELINE

GRAVITY FORCE (WEIGHT OF VESSEL)



MAST BULKHEAD RESISTS BENDING ACROSS ITS WIDTH



ANTARES 44 CALCULATIONS MAST LOAD DIAGRAM CA-04-04

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