

NATIONAL CARGO BUREAU, INC. GRAIN STABILITY CALCULATION FORM

* (Required for vessels loading bulk grain in the United States of America)

| | | |
|---------------------|-------------|---------------------------|
| M.V. / S.S. _____ | | KEEL LAID (month/year) |
| COUNTRY OF REGISTRY | NET TONNAGE | AT CITY |
| | | IN COUNTRY |
| AGENT _____ | | |

GRAIN LOADING BOOKLET APPROVED BY _____

ON BEHALF OF (FLAG STATE) _____

DRAWING NO. _____ DATE OF APPROVAL _____

APPLICABLE REGULATIONS _____

ADDENDUM FOR UNTRIMMED ENDS APPROVED BY _____

DRAWING NO. _____ DATE OF APPROVAL _____

LOADING PORT(S) _____

BUNKERING PORT(S) _____

DISCHARGE PORT(S) _____

STEAMING DISTANCE _____ MILES MILES PER DAY _____ TIME _____

DAILY CONSUMPTION: FUEL _____ DIESEL _____ WATER _____

DISPLACEMENT DEADWEIGHT DRAFT FREEBOARD

**WINTER _____ _____ _____ _____

SUMMER _____ _____ _____ _____

**TROPICAL _____ _____ _____ _____

FRESH WATER ALLOWANCE _____ TPC/TPI (AT SUMMER DRAFT) _____

* EXCEPT FOR EXEMPTED VOYAGES

** IF APPLICABLE

THIS IS TO CERTIFY THAT:

1. THIS CALCULATION IS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE VESSEL'S GRAIN LOADING BOOKLET AND THE APPLICABLE GRAIN REGULATIONS.
2. THE STABILITY OF THE VESSEL WILL BE MAINTAINED THROUGHOUT THE VOYAGE IN ACCORDANCE WITH THIS CALCULATION.

CALCULATION PREPARED BY:
(TO BE COMPLETED IF THE FORM IS PREPARED BY OTHER THAN SHIP'S PERSONNEL)

NAME (PRINT) _____

COMPANY _____

SIGNATURE _____

DATE _____

MASTER'S SIGNATURE

MASTER'S NAME (PRINTED)

EXAMINED BY: _____

N.C.B. SURVEYOR'S SIGNATURE

N.C.B. SURVEYOR'S NAME (PRINTED)

DATE: _____

NOTE: ORIGINAL STABILITY CALCULATION AND GRAIN ARRANGEMENT PLAN TO BE SUBMITTED TO THE N.C.B. SURVEYOR. ALL TONNAGES USED IN THIS CALCULATION SHALL BE SHOWN IN THE SAME UNITS AS USED IN THE GRAIN LOADING BOOKLET.

HEELING MOMENT CALCULATION

PART III

| COMPT. NO | STOWAGE (1) | GRAIN ULLAGE OR DEPTH | VOLUMETRIC HEELING MOMENT | S.F. OR DENSITY (2) | GRAIN HEELING MOMENT | VERTICAL SHIFTING MOMENT (IF PROVIDED) SEE NOTE 2 IN PART II | |
|---------------|-------------|-----------------------|----------------------------------|---------------------|----------------------|---|----------------|
| | | M/FT | M ⁴ / FT ⁴ | | MT- M / FT- LT | M ⁴ / FT ⁴ | MT- M / FT- LT |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| TOTALS | | | | | | | |

- (1) UNDER STOWAGE INDICATE "F-T" FOR FILLED COMPARTMENTS TRIMMED, "F-UT" FOR FILLED COMPARTMENTS UNTRIMMED, "PF" FOR PARTLY FILLED COMPARTMENTS, AND "SEC" FOR SECURED OR OVER-STOWED COMPARTMENTS.
- (2) THE STOWAGE FACTOR USED IN PART III SHALL NOT EXCEED THE ONE BASED ON THE WEIGHT PER UNIT OF VOLUME (TEST WEIGHT) OF THE GRAIN. IF THE STOWAGE FACTOR IS THE SAME IN ALL COMPARTMENTS, DIVIDE THE TOTAL VOLUMETRIC HEELING MOMENT BY THE STOWAGE FACTOR OR MULTIPLY BY THE DENSITY TO OBTAIN THE GRAIN HEELING MOMENT. IF THE STOWAGE FACTOR VARIES, OBTAIN THE GRAIN HEELING MOMENT FOR EACH COMPARTMENT.

INTERNATIONAL GRAIN CODE, Part A, 7.1
 REGULATION 4, CHAPTER VI, SOLAS 1974 or
 REGULATION 4, IMCO RESOLUTION A.264(VIII), NEW CHAPTER VI, SOLAS 1960
 REGULATION 4, IMCO RESOLUTION A.184 AN EQUIVALENT TO CHAPTER VI, SOLAS 1960

A. FOR VESSELS APPROVED UNDER

STABILITY SUMMARY

| | DEPARTURE | INTERMEDIATE | ARRIVAL |
|---|-----------|--------------|---------|
| DISPLACEMENT | | | |
| KG _v or GM | | | |
| TOTAL GRAIN HEELING MOMENT | | | |
| MAXIMUM ALLOWABLE HEELING MOMENT | | | |
| * ANGLE OF HEEL (12° MAX.) | | | |
| * RESIDUAL AREA 0.075 METER-RADIANS (14.1 FT ⁰ OR 4.3 M ⁰) MINIMUM | | | |
| * GM (0.3M OR 1 FT MINIMUM) | | | |

* TO BE COMPLETED IF VESSEL'S GRAIN LOADING BOOKLET DOES NOT INCLUDE A TABLE OF ALLOWABLE HEELING MOMENTS. IN SUCH CASE, STATICAL STABILITY DIAGRAMS DEMONSTRATING THIS INFORMATION SHALL BE ATTACHED HERETO.

B. FOR SPECIALLY SUITABLE SHIPS APPROVED UNDER

INTERNATIONAL GRAIN CODE, PART A, 8. 2
 SECTION V (B) , PART B, CHAPTER VI, SOLAS 1974
 SECTION V (B) , PART B, IMCO RESOLUTION A.264 (VIII), NEW CHAPTER VI, SOLAS 1960
 REGULATION 12, CHAPTER VI, SOLAS 1960

ANGLE OF HEEL = $\frac{\text{GRAIN HEELING MOMENT} \times 57.3}{\text{DISPLACEMENT} \times \text{GM}}$

| | DEPARTURE | INTERMEDIATE | ARRIVAL |
|----------------------------|-----------|--------------|---------|
| TOTAL GRAIN HEELING MOMENT | | | |
| DISPLACEMENT | | | |
| GM | | | |
| ANGLE OF HEEL (5° MAX.) | | | |