

U.S. Department
of Transportation

United States
Coast Guard



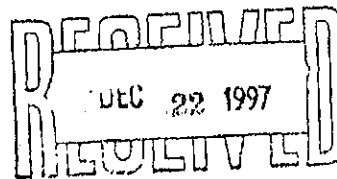
Commanding Officer
United States Coast Guard
Marine Safety Center

400 7TH Street S.W.
Washington, DC 20590-0001
Staff Symbol: MSC-3
Phone: (202)366-6441
Fax: (202)366-3877

16710/P003946
16710/CONR C-656
Serial: C1-9704085
December 17, 1997

Mr. M. Kawasaki
Design Associates, Inc.
14360 Chef Menteur Highway
New Orleans, Louisiana 70129

Subj: KOYUKUK, O.N. 1056825
Conrad Industries Hull No. C-656
150' x 50' x 7' Deck Cargo Barge (I)
Stability Letter



Ref: (a) Your letter dated December 15, 1997

Dear Mr. Kawasaki:

We have reviewed the information submitted with reference (a). Enclosure (1) is marked "Examined." Enclosures (2) and (3) are marked "Approved."

The lightweight characteristics, based on a deadweight survey witnessed by the U.S. Coast Guard, conducted on November 5, 1997 at Conrad Industries, Morgan City, LA, are as follows:

Displacement	238.28	Long Tons
VCG	4.19	Feet Above the Baseline
LCG	0.33	Feet Aft of Amidships

Per 46 CFR 170.120 (b), in lieu of a stability letter, ABS Americas is advised that the stability for the KOYUKUK, O.N. 1056825, is satisfactory for a summer load line assignment with a molded draft amidships of 5 feet, 0-3/8 inches. ABS Americas is directed to place the following statement on the face of the Load Line Certificate:

"This certificate is valid only so long as the operating restrictions on the vessel's Loading Diagram dated November 7, 1997, bearing the U.S. Coast Guard Marine Safety Center approval stamp dated December 17, 1997, are observed."

16710/P003946
16710/CONR C-656
Serial: C1-9704085
December 17, 1997

Subj: KOYUKUK, O.N. 1056825, STABILITY

Please contact Lieutenant Matthew Miller of my staff if you have any questions about our review of your submission.

Sincerely,



B. H. EKMS
Lieutenant Commander, U. S. Coast Guard
Chief, Domestic Tank Vessel Branch
By direction of the Commanding Officer

- Encl: (1) Stability Study for Conrad Hull No. C-656, dated
November 9, 1997
(2) Stability Test Data, dated November 5, 1997
(3) Loading Diagram for KOYUKUK, dated November 7, 1997

Copy: MSO Morgan City w/ encls (1) through (3)
ABS (Load Line/Stability Group) w/ encl (3)

CONRAD INDUSTRIES, INC.

150' x 50' x 7' DECK CARGO BARGE

HULL NO. C-656

STABILITY STUDY

EXAMINED
Subject to comments in
Marine Safety Center letter of

17 1997

JG J...
Commanding Officer
USCG Marine Safety Center

DESIGN ASSOCIATES, INC.
14360 Chef Menteur Hwy.
New Orleans, LA 70129
November 9, 1997
C-4161A

Summary:

Minimum GM values listed on page 3 are duplicated from DAI "Stability Criteria".

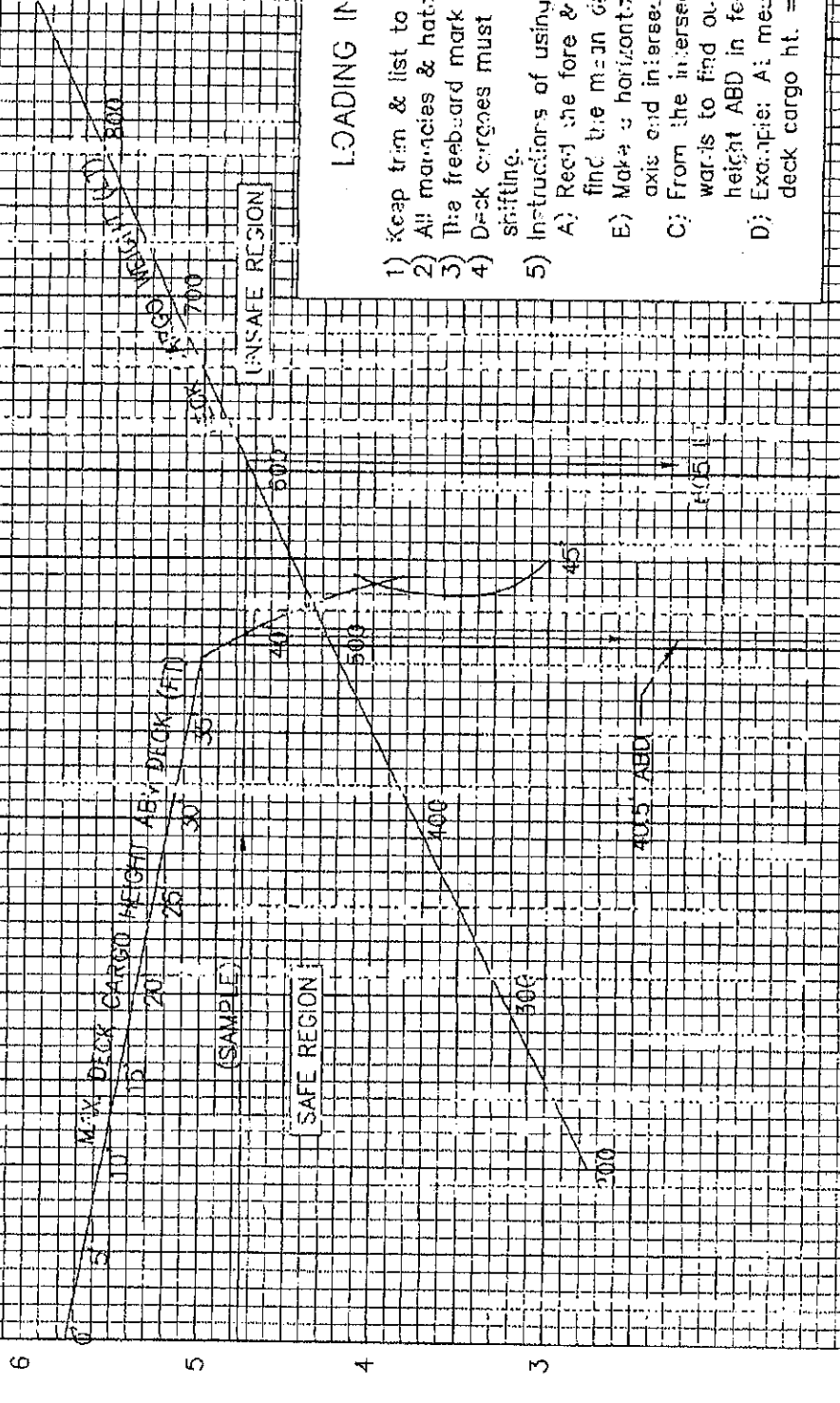
Required values are shown on page 4 of Maximum VCG of deck cargo above deck to meet both 15°ft energy criteria and maximum deck cargo height to meet weather criteria for ocean services.

The maximum deck cargo height above deck are shown on page 2 with the assumption that the deck cargo height is twice the cargo VCG above deck.

LOADING DIAGRAM

(MAXIMUM ALLOWABLE DECK CARGO HEIGHT TO BE AS SHOWN IN GRAPHS)

DRAFT (FT)



LOADING INSTRUCTIONS

- 1) Keep trim & list to minimum.
- 2) All manacles & hatches to be closed.
- 3) The freeboard mark should not be submerged.
- 4) Deck cargoes must be secured to prevent from shifting.
- 5) Instructions of using the diagram:
 - A) Read the fore & aft draft marks (P & S), find the mean draft in feet.
 - B) Make a horizontal line across from "DRAFT" axis and intersect the curves.
 - C) From the intersections, read vertical downward to find out the allowable deck cargo height ABD in feet & weight in long tons.
 - D) Example: At mean draft of 4.75', maximum deck cargo ht. = 40.5' ABD, wt = 605LT.

CONRAD, 150'x50'x7' DECK CARGO VESSEL 'KOYUKUK', H-656, C-4161A

Draft (feet)	Displace- ment (L. ton)	Maximum VCG above B. L. (feet)	Minimum GM (feet)	D e c k		C a r g o		Projected Area (A) (as defined for Weather Criteria)	Lever (h)	Tangent
				Weight (L. ton)	VCG above B. L. (ft)	VCG above deck (feet)	Height (feet)			
3.00	555.6	53.02	22.02	249.8	111.31	104.31	45.05	7,357.4	26.02	.08000
4.00	755.3	38.24	19.90	449.5	60.58	53.58	43.54	6,981.3	25.27	.06000
5.00	962.3	19.88	28.30	656.5	26.62	19.62	48.86	7,629.5	27.93	.04000
5.50	1,068.6	11.19	33.43	762.8	13.51	6.51	48.69	7,529.0	27.85	.03000
6.00	1,175.7	3.55	37.53	869.9	2.90	-4.10	44.07	6,760.7	25.54	.02000

The above calculations are to estimate the maximum deck cargo tonnage for given values of GM. The values of GM are calculated to meet Energy Criteria. Details of Energy Criteria should be referred to a separate report.

The maximum deck cargo height is estimated for the given values of GM to meet the Weather Criteria with the following assumption.

- (1) Length of deck cargo: 150.0 feet
- (2) Height of deck cargo is uniform, solid with no opening over the entire area

Principal dimensions and characteristics of the vessel are as follows.

Length	150.00 feet
Breadth	50.00 feet
Depth	7.00 feet
Weight of vessel	238.3 L. ton
VCG of vessel	4.2 feet above B. L.
Weight of liquid cargo	67.5 L. ton
VCG of liquid cargo	4.8 feet above B. L.
Value of p	0.005112

If VCG of deck cargo above deck is a negative value no deck cargo can be loaded on deck.

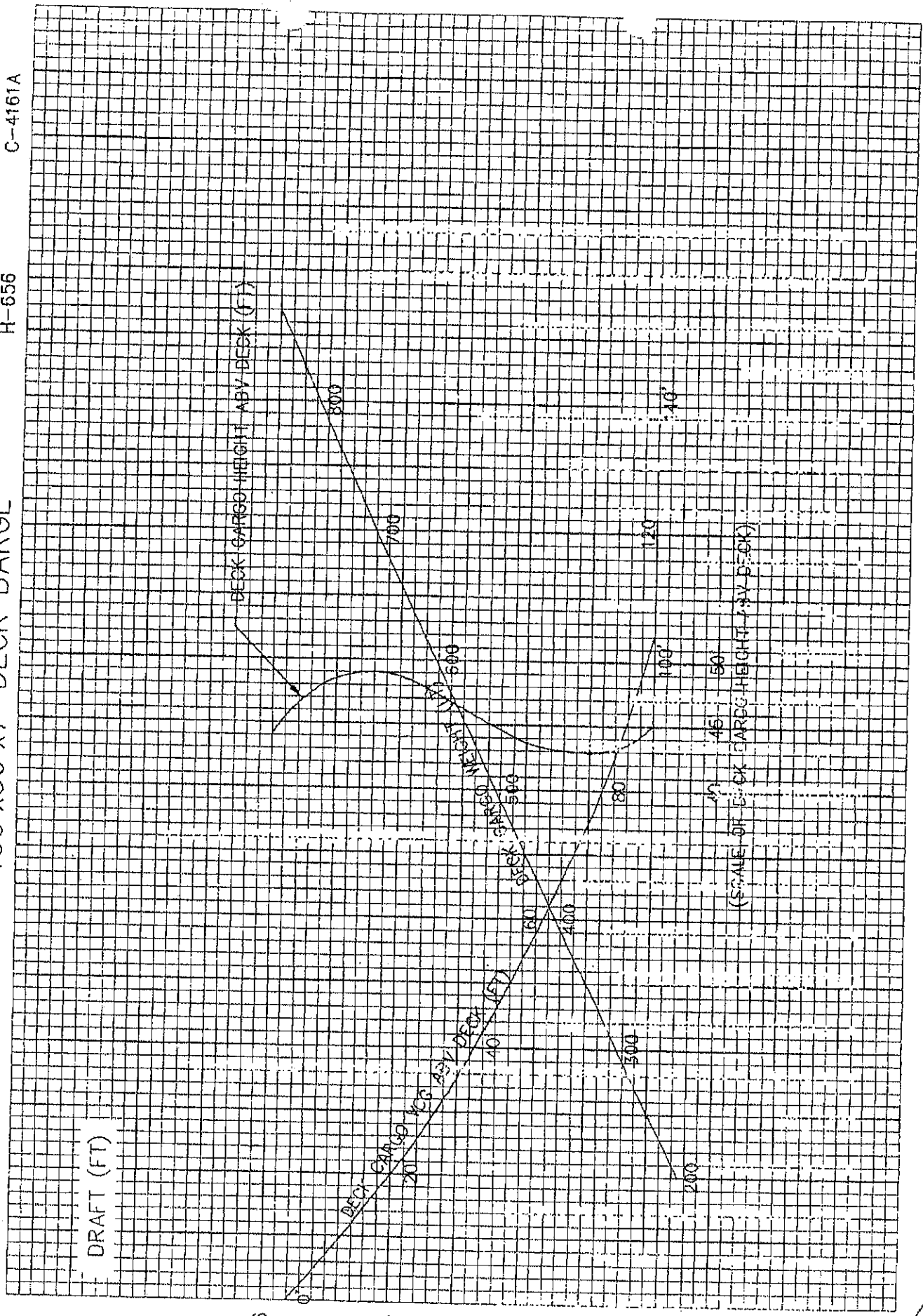
Free surface effects included in the calculation are 328 Ft-ton. Weight and center of deck cargo as shown on the table includes effects of any liquid which may be carried.

Ordinarily VCG of cargo above deck is about one half or one-third of cargo height. Both of VCG (above deck) and height requirements must be met, for example, if cargo height is lower than VCG above deck, VCG will be less than its value in table after the height requirement is met.

150'x50'x7' DECK BARGE

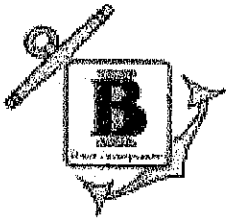
C-4161A

H-656



FILE NAME: 4161A.DWG
PLOT SCALE: 1 = 1
10:30 11/7/1997

KOYUKUK



Draft -vs- Displacement

<u>Draft</u>	<u>Displacement</u>	<u>Draft</u>	<u>Displacement</u>	<u>Draft</u>	<u>Displacement</u>
12"	193.76	37"	622.72	62"	1086.18
13"	210.22	38"	640.64	63"	1105.44
14"	226.80	39"	658.56	64"	1124.82
15"	243.38	40"	676.59	65"	1144.08
16"	260.06	41"	694.62	66"	1163.57
17"	276.75	42"	712.66	67"	1182.94
18"	293.55	43"	730.91	68"	1202.43
19"	310.35	44"	749.06	69"	1221.92
20"	327.26	45"	767.31	70"	1241.30
21"	344.18	46"	785.68	71"	1260.78
22"	361.20	47"	804.05	72"	1280.16
23"	378.22	48"	822.42	73"	1299.65
24"	395.36	49"	840.90	74"	1319.14
25"	412.50	50"	859.49	75"	1338.51
26"	429.74	51"	878.08	76"	1358.00
27"	446.99	52"	896.67	77"	1377.38
28"	464.35	53"	915.38	78"	1396.86
29"	481.71	54"	934.19		
30"	499.18	55"	953.01		
31"	516.66	56"	971.82		
32"	534.24	57"	990.75		
33"	551.82	58"	1009.79		
34"	569.52	59"	1028.83		
35"	587.22	60"	1047.76		
36"	604.91	61"	1067.02		

Barge KOYUKUK Bunker Fuel

Inches of Fuel in Tank	Gallons of Fuel in Tank
1	399
2	798
3	1197
4	1596
5	1995
6	2394
7	2793
8	3192
9	3591
10	3990
11	4389
12	4788
13	5186
14	5585
15	5984
16	6383
17	6782
18	7181
19	7580
20	7979
21	8378
22	8777
23	9176
24	9575
25	9974
26	10373

Inches of Fuel in Tank	Gallons of Fuel in Tank
27	10772
28	11171
29	11570
30	11969
31	12368
32	12767
33	13166
34	13565
35	13964
36	14363
37	14762
38	15160
39	15559
40	15958
41	16357
42	16756
43	17155
44	17554
45	17953
46	18352
47	18751
48	19150
49	19549
50	19948
51	20347
52	20746
52.5	20945