S.A. Malliaroudakis Maritime UK Ltd.

DESCRIPTION OF SMM DRAFT SURVEY INSTRUMENT

BRIEF DESCRIPTION

It is a user-friendly Draft Survey calculation Instrument. It is designed to take care of complete draft survey needs. The purpose of SMM Draft Survey Instrument is to save time which can be spent to take more careful measurements which can greatly increase the accuracy of the survey results and avoid the mathematical mistakes due to shortage of time.

Our Company, as Loading Instrument Manufacturer since 1986, focuses on ship specific management tools, which require ship specific plans. From our experience, Ship Operators greatly benefit from a responsible third-party opinion. Our ship specific draft survey software incorporating all technical data (Hydrostatics, **Sounding Tables of all Tanks**, etc.) provides a swift solution in the hands of a Chief Officer to double check responsibly for his Owners' account this very important survey for the Quantity of Cargo Determination. The Ship Specific Technical Approach is, always, more transparent and concrete to all parties involved and thus helpful.

Features of Draft Survey Module for vessel and office application:

- **Memory of Last Known Weights** for each Tank brings savings in time and effort for every single draft survey.
- **Automatic synchronization** of data between vessel and office.
- **Print-out tailored** to your good Company's needs
- **Users' Manual** is incorporated in each Program with **detailed & extensive Instructions**

Benefits of Draft Survey Module for vessel and office application:

- **Automatic corrections** for Trim/Heel/Density/Temperature.
- **Instantaneous** Calculations of DWT Items
- **Improved efficiency** of operations, judgement and communication.
- **Timeline of all the recorded Draft Surveys**
- **Clarity &Transparency** based on official shipyard's documentation (Sounding/Calibration Tables) endorsed by SMM (UK) Ltd. as 3rd party.

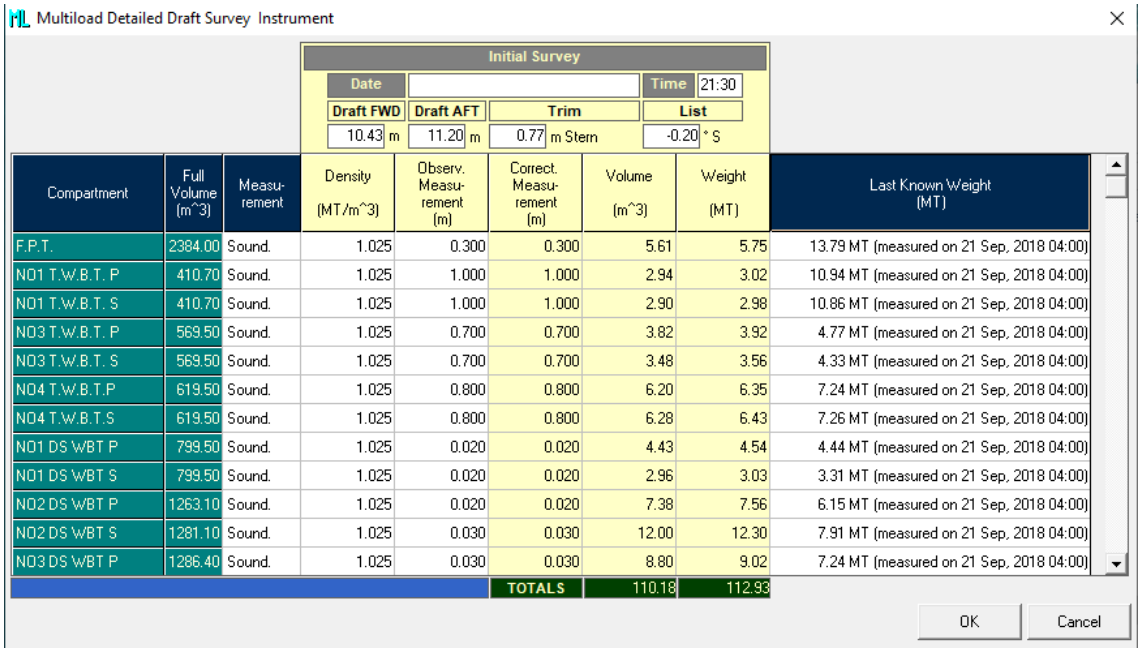
FREQUENTLY ASKED QUESTIONS

1. How the crew familiarization is achieved?
    a. Manual is incorporated in each Program with detailed & extensive Instructions
    b. Distant Training
    c. Direct Replies to Email of Masters / Chief Officers / Chief Engineers with Cc to your good Company
    d. User Friendliness of Software Interface with a brief description of required actions
2. How we can we handle tiresome ISM / SMS Amendments for alignment with this SMM Product?
    a. SMM Software is tailored to your company's policy/S.M.S. meaning minor ISM/SMS alterations.
    b. Just a quick reference to the SMM Software in place and their Manual Contents in ISM is, often, common and effective practice for the majority Shipping Companies.

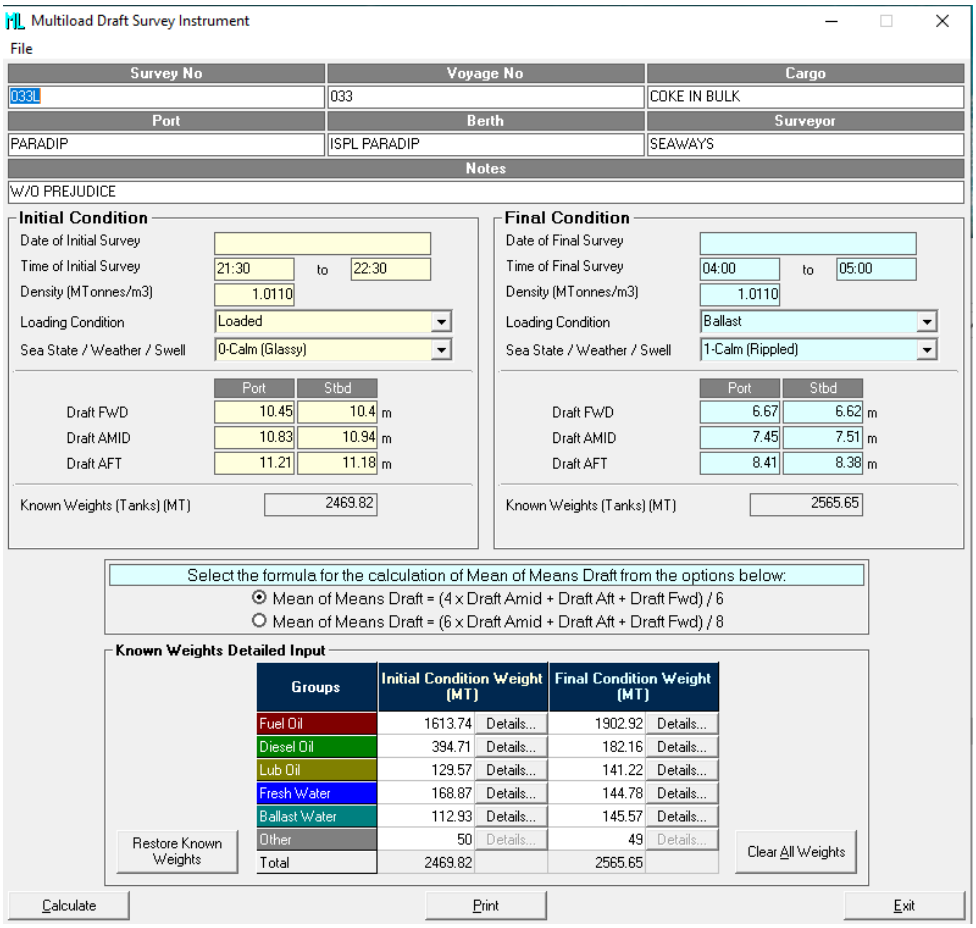
3. Relative requirements of Programs (hardware, software, data exchange if any)
    a. Light, server-based application running exclusively on Windows operating system environments
    b. SMM Software can be operated by multiple users (clients) on a network
    c. Sync Mechanism requires email access or *data import path* for the whole fleet or a desired path for each vessel.
    d. Possible export in desired editable format, upon discussion and analysis.

SCREENSHOTS

Please see below **Screenshots**:



Compartment	Full Volume (m^3)	Measu-rement	Density (MT/m^3)	Observ. Measu-rement (m)	Correct. Measu-rement (m)	Volume (m^3)	Weight (MT)	Last Known Weight (MT)
F.P.T.	2384.00	Sound.	1.025	0.300	0.300	5.61	5.75	13.79 MT (measured on 21 Sep, 2018 04:00)
NO1 T.W.B.T. P	410.70	Sound.	1.025	1.000	1.000	2.94	3.02	10.94 MT (measured on 21 Sep, 2018 04:00)
NO1 T.W.B.T. S	410.70	Sound.	1.025	1.000	1.000	2.90	2.98	10.86 MT (measured on 21 Sep, 2018 04:00)
NO3 T.W.B.T. P	569.50	Sound.	1.025	0.700	0.700	3.82	3.92	4.77 MT (measured on 21 Sep, 2018 04:00)
NO3 T.W.B.T. S	569.50	Sound.	1.025	0.700	0.700	3.48	3.56	4.33 MT (measured on 21 Sep, 2018 04:00)
NO4 T.W.B.T.P	619.50	Sound.	1.025	0.800	0.800	6.20	6.35	7.24 MT (measured on 21 Sep, 2018 04:00)
NO4 T.W.B.T.S	619.50	Sound.	1.025	0.800	0.800	6.28	6.43	7.26 MT (measured on 21 Sep, 2018 04:00)
NO1 DS WBT P	799.50	Sound.	1.025	0.020	0.020	4.43	4.54	4.44 MT (measured on 21 Sep, 2018 04:00)
NO1 DS WBT S	799.50	Sound.	1.025	0.020	0.020	2.96	3.03	3.31 MT (measured on 21 Sep, 2018 04:00)
NO2 DS WBT P	1263.10	Sound.	1.025	0.020	0.020	7.38	7.56	6.15 MT (measured on 21 Sep, 2018 04:00)
NO2 DS WBT S	1281.10	Sound.	1.025	0.030	0.030	12.00	12.30	7.91 MT (measured on 21 Sep, 2018 04:00)
NO3 DS WBT P	1286.40	Sound.	1.025	0.030	0.030	8.80	9.02	7.24 MT (measured on 21 Sep, 2018 04:00)
					TOTALS	110.18	112.93	



DRAFT SURVEY REPORT

Survey No	033L
Voyage No	033
Cargo	COKE IN BULK
Port	PARADIP
Berth	ISPL PARADIP
Surveyor	SEAWAYS
Notes	W/O PREJUDICE

	INITIAL CONDITION	FINAL CONDITION
Date of Survey		
Time of Survey	21:30 to 22:30	04:00 to 05:00
Sea water Density	1.0110 MT/m3	1.0110 MT/m3
Condition	Loaded	Ballast
Sea State/Weather/Swell	0-Calm (Glassy)	1-Calm (Rippled)

	INITIAL	FINAL
FWD Draft (P)	10.450 m	6.670 m
FWD Draft (S)	10.400 m	6.620 m
FWD Mean Draft	10.425 m	6.645 m
Correction	-0.013 m	-0.030 m
Corr. FWD Draft	10.412 m	6.615 m
MID Draft (P)	10.830 m	7.450 m
MID Draft (S)	10.940 m	7.510 m
MID Mean Draft	10.885 m	7.480 m
Correction	-0.004 m	-0.008 m
Corr. MID Draft	10.881 m	7.472 m
AFT Draft (P)	11.210 m	8.410 m
AFT Draft (S)	11.180 m	8.380 m
AFT Mean Draft	11.195 m	8.395 m
Correction	0.052 m	0.118 m
Corr. AFT Draft	11.247 m	8.514 m
FWD & AFT MEAN	10.829 m	7.564 m
	-0.052 m	0.092 m
DEFORMATION	SAGGING	HOGGING

HYDROSTATIC DATA	INITIAL	FINAL
App. TRIM	-0.770 m	-1.750 m
Corr. TRIM	-0.836 m	-1.899 m
LCF	2.203 m	-3.598 m
MTC (tm/cm)	924.40	766.39
LBP	193.74 m	
LIGHTSHIP	9600.00 MT	

Trim +VE by HEAD / -VE by STERN
LCF measured from AMID (-VE Fwd/+VE Aft)

NON CARGO WEIGHTS	INITIAL	FINAL
Fuel Oil	1613.74 MT	1902.92 MT
Diesel Oil	394.71 MT	182.16 MT
Lub Oil	129.57 MT	141.22 MT
Fresh Water	168.87 MT	144.78 MT
Ballast	112.93 MT	145.57 MT
Others	50.00 MT	49.00 MT
TOTALS	2469.82 MT	2565.65 MT

MEANS OF MEANS Draft	10.864 m	7.503 m
1st TRIM Corr.	10.874 m	7.467 m
DISPLACEMENT	59762.8 MT	39479.9 MT
2nd TRIM Corr.	5.9 MT	39.7 MT
DISPL. Corr. for Trim	59768.7 MT	39519.6 MT
Obs. Density	1.0110	1.0110
DISPL. Corr. for Density	58952.3 MT	38979.8 MT
DEDUCTIBLES	2469.8 MT	2565.7 MT
REMAINING WEIGHT	46882.5 MT	46882.5 MT
CARGO	DISCHARGED	-20068.4 MT

MASTER/VESSEL'S SIGNATURE CHIEF ENGINEER'S SIGNATURE

WE CAN SAIL TOGETHER…..

S.A. Malliaroudakis Maritime (UK) Ltd.

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