August 2024
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Manual for updated Perplex
Version 1.5.0.0

Users of Perplex7 have suggested making it easier to enter devices at stations. For this purpose, you will now find the panel “Clone Cast Setup from...” in the “Stations” tab (see Figure 1), which allows you to transfer the cast setup of a selected station to one or more consecutive numbers in the list of waypoints/stations to clone it. The necessary operating steps are explained in these instructions.

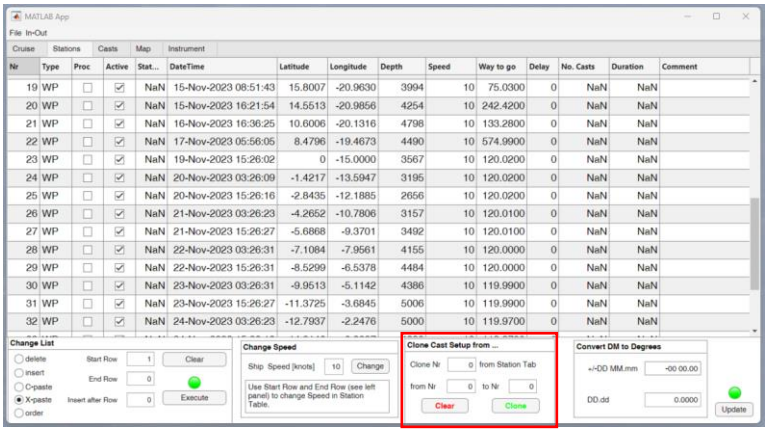


Fig. 1: New in operation in Perplex is the “Clone Cast Setup”, see red box.

Cloning is explained using the example of a cruise from Bremerhaven to Cape Town, which is shown in Figure 2.

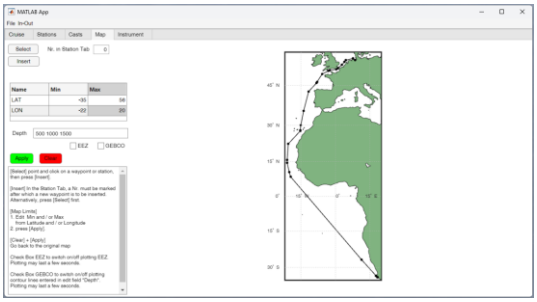


Fig. 2: Cruise track displayed in “Map” tab.

The program “Way Points Along Transect” is used to calculate waypoints from the equator; 15° W to 15°S; 0° meridian, i.e. longitude and latitude at intervals of 120 nautical miles, which are then saved in a text file.

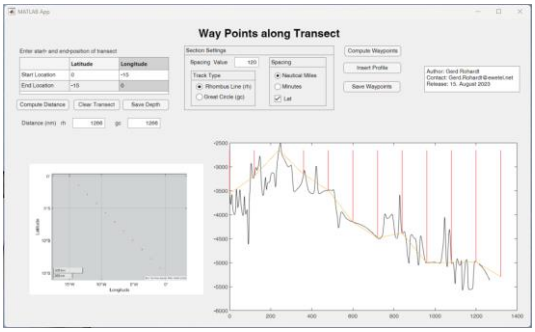


Fig. 3: Display of the “Way Points Along Transect”; see manual for application for further details.

Use menu [In – Out - Import from txt-file] of Perplex7 to add the waypoints of the transect to the track, see Figure 4 and 5 below.

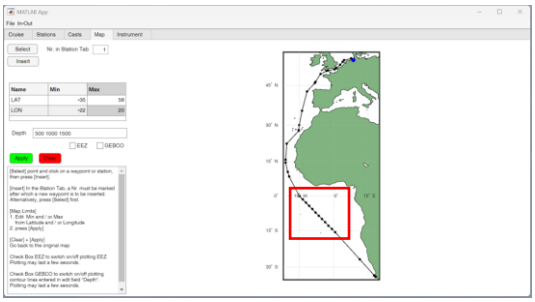
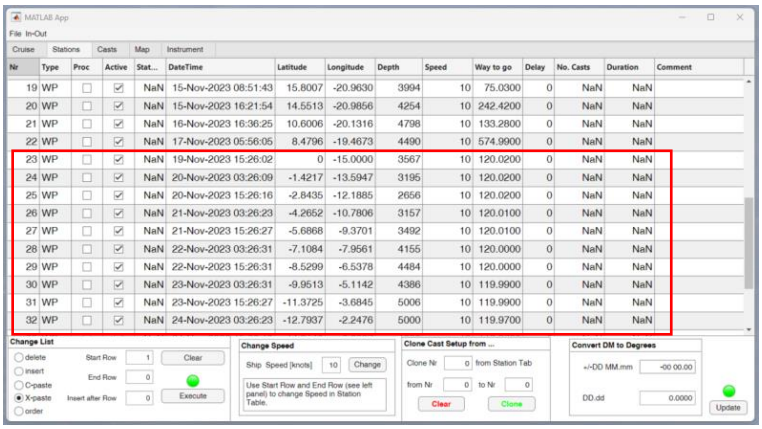


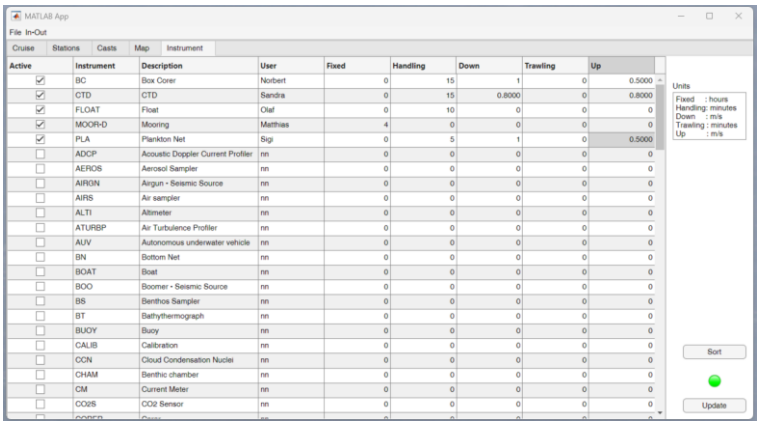
Fig. 4: "Map" tab after inserting the transect; see red box.



Nr	Type	Proc	Active	Stat...	DateTime	Latitude	Longitude	Depth	Speed	Way to go	Delay	No. Casts	Duration	Comment
19	WP		☑	NaN	15-Nov-2023 08:51:43	15.8007	-20.9630	3994	10	75.0300	0	NaN	NaN	
20	WP		☑	NaN	15-Nov-2023 16:21:54	14.5513	-20.9856	4254	10	242.4200	0	NaN	NaN	
21	WP		☑	NaN	16-Nov-2023 16:36:25	10.6006	-20.1316	4798	10	133.2800	0	NaN	NaN	
22	WP		☑	NaN	17-Nov-2023 05:56:05	8.4796	-19.4673	4490	10	574.9900	0	NaN	NaN	
23	WP		☑	NaN	19-Nov-2023 15:26:02	0	-15.0000	3567	10	120.0200	0	NaN	NaN	
24	WP		☑	NaN	20-Nov-2023 03:26:09	-1.4217	-13.5947	3195	10	120.0200	0	NaN	NaN	
25	WP		☑	NaN	20-Nov-2023 15:26:16	-2.8435	-12.1885	2656	10	120.0200	0	NaN	NaN	
26	WP		☑	NaN	21-Nov-2023 03:26:23	-4.2652	-10.7806	3157	10	120.0100	0	NaN	NaN	
27	WP		☑	NaN	21-Nov-2023 15:26:27	-5.6868	-9.3701	3492	10	120.0100	0	NaN	NaN	
28	WP		☑	NaN	22-Nov-2023 03:26:31	-7.1084	-7.9561	4155	10	120.0000	0	NaN	NaN	
29	WP		☑	NaN	22-Nov-2023 15:26:31	-8.5299	-6.5378	4484	10	120.0000	0	NaN	NaN	
30	WP		☑	NaN	23-Nov-2023 03:26:31	-9.9513	-5.1142	4386	10	119.9900	0	NaN	NaN	
31	WP		☑	NaN	23-Nov-2023 15:26:27	-11.3725	-3.6845	5006	10	119.9900	0	NaN	NaN	
32	WP		☑	NaN	24-Nov-2023 03:26:23	-12.7937	-2.2476	5000	10	119.9700	0	NaN	NaN	

Fig. 5: "Stations" tab after inserting the transect; see red box

Furthermore, the devices to be used during the cruise must be selected in the "Instrument" tab and the specific details must be entered too. In this example, Box Corer, CTD, Float, Mooring Deployment and the Plankton Net are used, see figure below.



Active	Instrument	Description	User	Fixed	Handling	Down	Trawling	Up
☑	BC	Box Corer	Norbert	0	15	1	0	0.5000
☑	CTD	CTD	Sandra	0	15	0.8000	0	0.8000
☑	FLOAT	Float	Olaf	0	10	0	0	0
☑	MOOR-D	Mooring	Matthias	4	0	0	0	0
☑	PLA	Plankton Net	Sigi	0	5	1	0	0.5000
☐	ADCP	Acoustic Doppler Current Profiler	nn	0	0	0	0	0
☐	AEROS	Aerosol Sampler	nn	0	0	0	0	0
☐	AIRGN	Airgun - Seismic Source	nn	0	0	0	0	0
☐	AIRS	Air sampler	nn	0	0	0	0	0
☐	ALTI	Altimeter	nn	0	0	0	0	0
☐	ATURBP	Air Turbulence Profiler	nn	0	0	0	0	0
☐	AUV	Autonomous underwater vehicle	nn	0	0	0	0	0
☐	BN	Bottom Net	nn	0	0	0	0	0
☐	BOAT	Boat	nn	0	0	0	0	0
☐	BOO	Boomer - Seismic Source	nn	0	0	0	0	0
☐	BS	Benthos Sampler	nn	0	0	0	0	0
☐	BT	Bathythermograph	nn	0	0	0	0	0
☐	BUOY	Buoy	nn	0	0	0	0	0
☐	CALIB	Calibration	nn	0	0	0	0	0
☐	CCN	Cloud Condensation Nuclei	nn	0	0	0	0	0
☐	CHAM	Benthic chamber	nn	0	0	0	0	0
☐	CM	Current Meter	nn	0	0	0	0	0
☐	CO2S	CO2 Sensor	nn	0	0	0	0	0

Fig. 6: "Instrument" tab with their specific details.

As an example, there should be two different types of device deployments on stations:

Cast Type A: From the equator (no. 23 in the “Stations” tab) to 5.68° S (no. 27)

(1) CTD to 500 m
(2) PLA to 200 m
(3) CTD to bottom
(4) BC to bottom

Cast Type B: From no. 28 up to 15.6° S (no. 34)

(1) CTD to 1000 m
(2) PLA to 200 m
(3) Float

Insert Cast Type A at no. 23 as described in the Perplex7-Manual.pdf page 15. Note that the depth respectively the depth of the profile for each instrument is set to the value of the water depth obtained from the GEBCO grid.

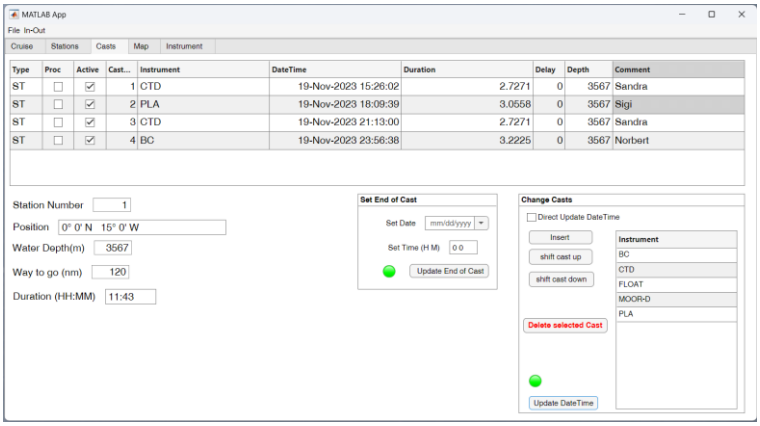


Fig. 7: Cast Type A, here as Station Number 1.

The profile depth must be changed manually if the instrument shall be lowered to a depth other than the seabed. Therefore change Depth for Cast 1 to 500 and for Cast 2 to 200 (see Perplex7-Manual.pdf page 15) and see in Figure 8 how this has reduced the “Duration”.

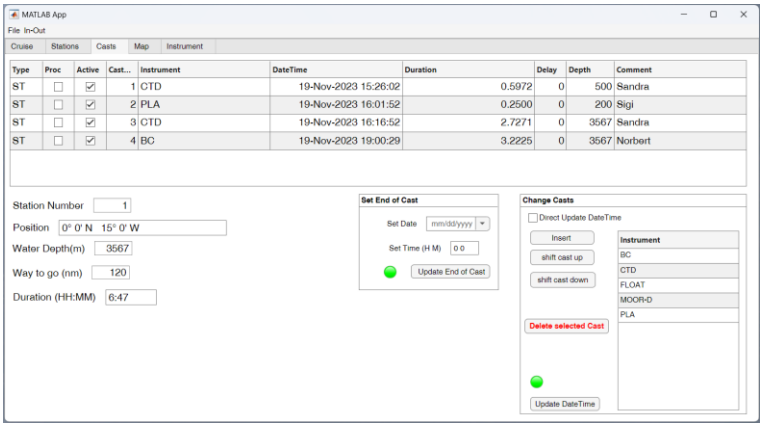


Fig. 8: Cast Type A after changing “Depth” as required.

Go back to the “Stations” tab and now click in line 28 in the 5th column named “StatNr”, where there is still a NaN. Then switch to the “Casts” tab and enter the setup for Cast Type B there - proceed in the same way as for Cast Type A. The “Cast” tab then looks like Figure 9 below.

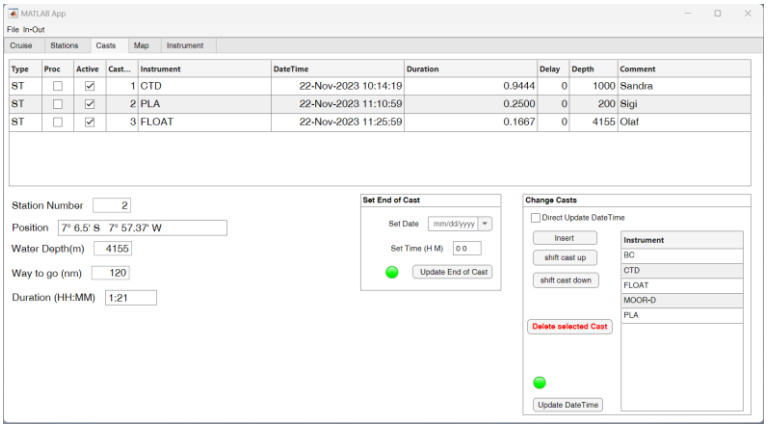


Fig. 9: Cast Type B after changing “Depth” as required.

The “Stations” tab now shows two stations, (Nr. 23) station number 1 with No. Casts = 4 and (Nr. 28) station number 2 with 3 casts.

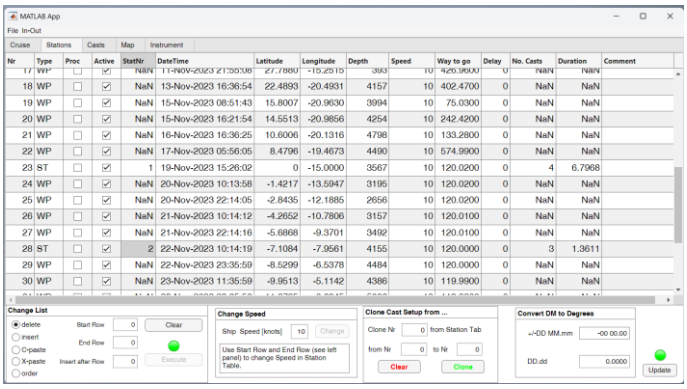


Fig. 10: The “Stations” tab showns StatNr 1 and StatNr 2.

Stay in the “Stations” tab to insert Cast Type A now also at No. 24 to No. 27. As Cast Type A has already been inserted at No. 23, we can clone it for No. 24 to 27 and proceed as follows. In the “Clone Cast Setup for ...” panel, we set : Clone Nr = 23, from Nr = 24 and to Nr = 27 and then press the “[Clone]” button. The result can be seen in Figure 11.

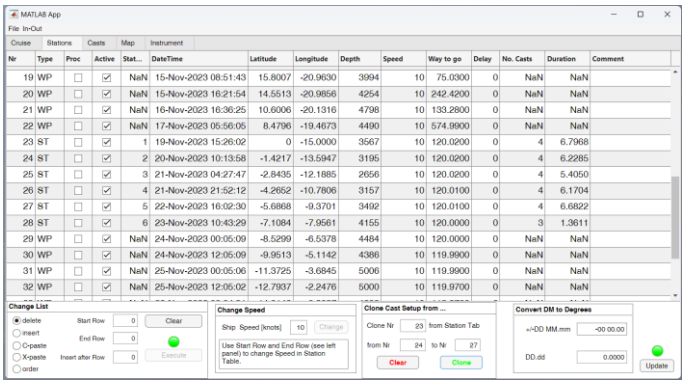


Fig. 11: Note the information in the “Clone Cast Setup from...” panel. [Clone] was executed, as can be seen in the fifth column “StatNr”. The StatNo. has been updated so that a 6 can now be seen in line no. 28.

Then insert the Cast Type B for the remaining waypoints of the transect (up to latitude 15.6354 °S). Use the [Clear] button to delete and reset the previous entries. Press the [Clone] button to display the complete cut; see Figure 12.

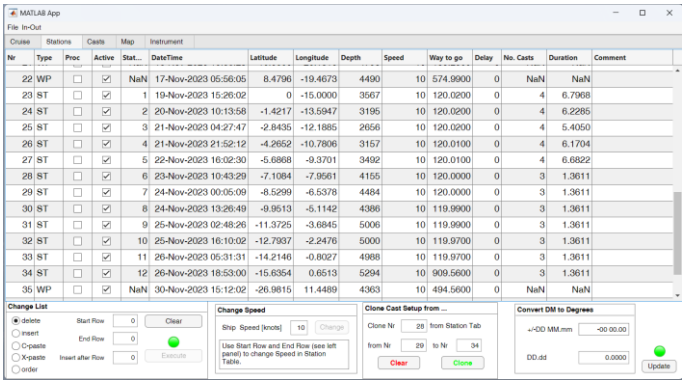


Fig. 12: The complete transect from station number 1 to station number 12.

Stations can be activated or deactivated as usual in the “Station” tab. You can also activate or deactivate casts in the “Cast” tab. Because it can happen that a device has been added unintentionally or twice, you will now find the [Delete selected Cast] button in the “Cast” tab. This is more suitable instead of deactivating.

Cloning also works if a device has already been entered at a station. To demonstrate this, insert e.g. a “Float” in the “Station” tab in line no. 17 as described in the Perplex7-Manual.pdf.

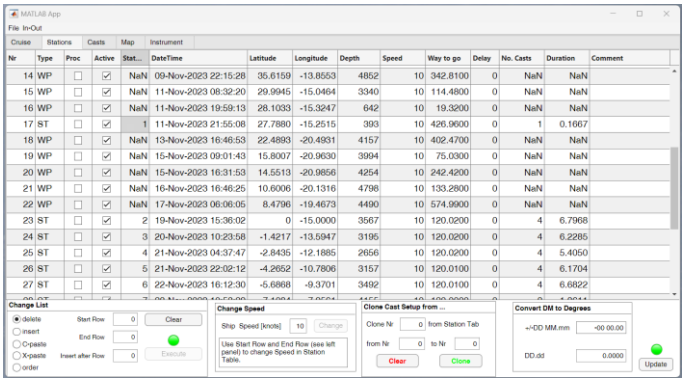


Fig. 13: “Stations” tab in which a float was inserted in line 17. Note that the numbering of the stations has been changed automatically.

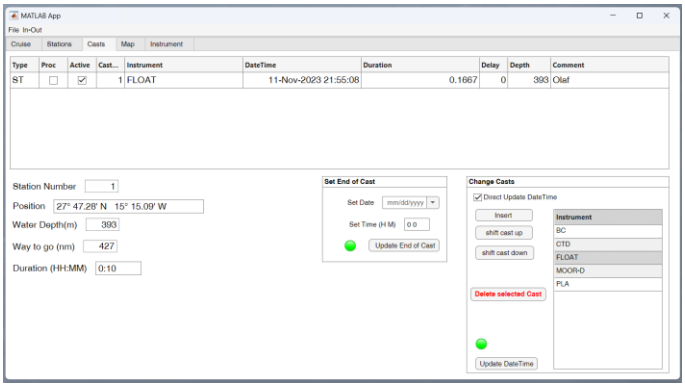


Fig. 14: “Casts” tab in which a FLOAT was inserted in Station Number 1.

Now, for example, all devices of Cast Type A should be added to Station 1.

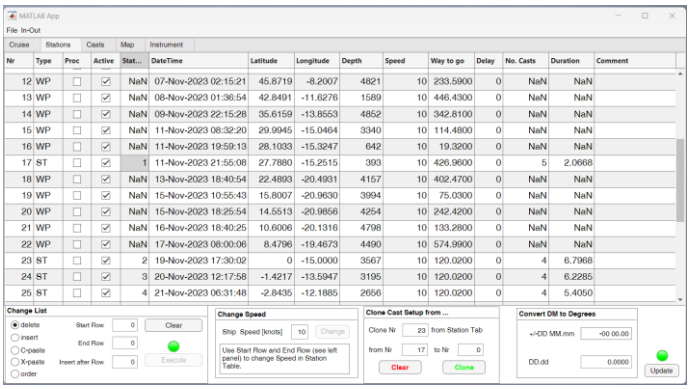


Fig. 15: “Stations” tab in which Clone Nr = 23 (with Cast Type A) and from Nr = 17 (to Nr = 0 or 17) in this case. After pressing buttom [Clone], see that No. Casts has changed from 1 to 5.

Figure 16 shows the “Casts” tab in which FLOAT and Cast Type A have been merged. If necessary, the FLOAT can be moved to the 5th position using the [shift cast up] or [shift cast down] buttons.

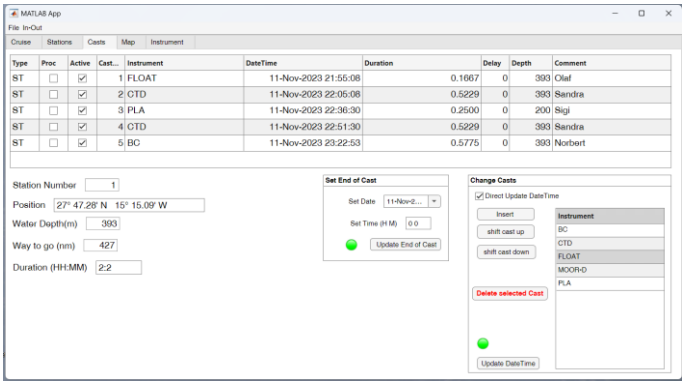


Fig. 16: “Casts” tab with FLOAT and Cast Type being cloned from Station Number 2. Note that the profile depth of the CTD from cast type A was set at 500 m, but was adjusted here to the shallower water depth (393 m). However, the profile depth of the PLA remained unchanged during cloning.