

# 1. SeaPlow VIII Plow Device

Revision History			
Revision	Date	Author	Comments
01A	Nov 21, 2024	G Wright	Initial release

### 1.1 Overview

The SeaPlow VIII device supports input from and output to the SeaPlow VIII plow. Input and output messages are comma delimited.

## 1.2 Message Validation

The input message is tested for valid ASCII alpha and numeric characters.

### 1.3 Add Device

- 1. From the Explorer view or Setup ribbon, select Devices to display the IO Devices
- 2. From the dropdown list, select SeaPlow Plow and click the + button



3. Configure the Device IO parameters and apply them accordingly (refer to the Devices section of the User Guide)

# 1.4 Configure Device

 Access the Configure SeaPlow Plow view by either right mouse clicking on the SeaPlow Plow device in the list and selecting Device Settings or selecting it in the list and clicking the Configure device icon () in the Device view tool bar



Configure SeaPlow Plow	_		
Input Output			
Input latency:	0.000 s		
Port Pull Units:	newton 🛛 👻		
Stbd Pull Units:	newton 🛛 👻		
As-Laid Tension Units:	newton 🛛 👻		
Depressor Height Units:	centimetre   👻		
Trench Depth Units:	metre 🛛 👻		
Sub Depth Units:	metre 🛛 👻		
Fwd Port Skid Height Units:	metre 🛛 👻		
Fwd Stbd Skid Height Units:	metre 🛛 👻		
Aft Port Skid Height Units:	metre 🛛 👻		
Aft Stbd Skid Height Units:	metre 🛛 👻		
Altitude Units:	metre 🛛 👻		
Speed Units:	knots 🛛 👻		
Distance Travelled Units:	metre 🛛 👻		
Ship Tow Tension Units:	newton 🛛 👻		
Ship Tow Payout Units:	metre 🛛 👻		
Burial Depth Units:	centimetre   👻		
		ОК	Cancel

Figure 1 SeaPlow Plow Input Configuration

- 2. The configuration of the input and output are addressed on separate tabs
- 3. Input
  - a. Input latency:
    - i. If the latency of the input message is known, enter it here, otherwise leave this at 0
  - b. The units used for inputs to NavView are configured on the plow system by the plow operator, NavView supports configuring this device to match the data accordingly
    - i. From the respective dropdown list, select the units
    - ii. Figure 1 is an example of the settings
- 4. Output
  - a. NavView supports the selection of the data source for each output item to provide the greatest flexibility and the units to use for the output
    - i. For each output type, the respective dropdown list presents all available data sources of that type
    - ii. For each output type selected, the respective dropdown list presents the appropriate unit options
    - iii. From the respective dropdown lists, select the data source and units to use
    - iv. If the option None is selected for a data source, the respective field in the output message is empty
    - ۷.
  - b. Figure 2 is an example of appropriate data source selections and units



♥ Configure SeaPlow Plow				
Input Output				
Rov heading source:	Vehicles/CS Responder/Heading	*		
Rov linear velocity source:	Calculations/RigidBody(New)-Responder/Track made good/Linear velocity	*		
Rov output speed unit:	knots	-		
Tension Output source:	Devices/Honeywell Experion/Inputs/LCEDyn_Ten	*		
Tension Output unit:	pound	•		
Count Output source	Devices/Honeywell Experion/Inputs/LCECable_Count	*		
Count output unit:	metre	•		
	OKCar	ncel		

Figure 2 SeaPlow Plow Output Configuration

- c. The output message is terminated with <CR><LF>
- 5. Once configuration is complete click OK

## 1.5 Monitoring

- 1. Open a Device Status view (see the Devices section in the User Guide)
- 2. ASCII Decode Tab

SeaPlow Plow VIII	• 1	ţ,
ASCII Decode Dat	a	
Rx Packets/Second 1.0		
Tx Packets/Second 1.0		
Rx Overflow 0.0		
Data Transport Det	ails	
Time	Data	
11/21/2024 15:53:24.4	\$SPVIII,-27.68,-19.63,0.00,17.3,17.0,0.70,-0.24,-0.44,-5.1,-2.7,0.6,27.4,44.0	,
11/21/2024 15:53:24.4	\$WFSP,145.24000,9.37426,416.51428,-27.19483	1
11/21/2024 15:53:23.4	\$SPVIII,-27.69,-19.63,0.00,17.4,17.0,0.69,-0.18,-0.19,-5.1,-2.7,0.7,27.3,44.0	
11/21/2024 15:53:23.4	\$WFSP,145.14000,9.37104,416.51428,-27.19483	
11/21/2024 15:53:22.4	\$\$PVIII,-27.68,-19.63,0.00,17.4,16.7,0.62,-0.93,-0.25,-5.1,-2.7,0.7,27.3,44.0	
11/21/2024 15:53:22.4	\$WFSP,145.29000,9.37104,403.18096,-27.19483	
11/21/2024 15:53:21.4	\$SPVIII,-27.68,-19.62,0.00,17.4,16.7,0.61,-0.51,-0.19,-5.1,-2.7,0.6,27.4,44.0	,
11/21/2024 15:53:21.4	\$WFSP,145.34000,9.37364,403.18096,-27.19483	
11/21/2024 15:53:20.4	\$\$PVIII,-27.68,-19.62,0.00,17.4,17.0,0.68,-0.10,0.00,-5.1,-2.7,0.7,27.3,44.0,0	0

Figure 3 SeaPlow Plow Device Status View - ASCII Decode Tab

- a. Rx Packets/Second: Displays the input rate of the received messages
- b. Tx Packets/Second: Displays the output rate of transmitted messages
- c. Rx Overflow: Displays the number of bytes in the case of an input buffer flow
- d. Scrolling list of received (green) and transmitted (blue) messages
- 3. Data Tab
  - a. Displays the decoded and published data



SeaPlow Plow V	/11				
💓 🛄 📰					
ASCII Decode	Data				
► SeaPlow	<b>≣</b> <u></u> ∮↓	×			
	✓ Plow		SeaPlow Plow VIII		
	AftPort Skid Height		💓 🛄 📰		
	AftStbd Skid Height		ASCII Decode Data		
	Altitude			Heading	
	As-Laid Tension		SeaPlow	Heading	44 00°
	Burial Depth		PortPull	- Usedia a	11.00
	Comment		StbdPull	σ Heading	
	Depressor Height		DepressorHeight		
	Distance Travelled		TrenchDepth		
	FwdPort Skid Height		Pitch-Roll		
	FwdStbd Skid Height		SubDepth		
	Heading		FwdPortSkidHeight		
	Pitch		FwdStbdSkidHeight		
	Plow Steer Angle		AftPortSkidHeight		
	Port Pull		AftStbdSkidHeight		
	Boll		Heading		
	Shin Tow Payout		Altitude		
	Ship Tow Taylor		Speed		
	Ship low lension		DistanceTravelled		
	Speed		ShipTowTen		
	Stbd Pull		ShipTowOut		
	Sub Depth		Tolomoto /ToPley		
	Telemetry		TowCableApple		
	Tow Cable Angle		PlowSteerAngle		
	Trench Depth		PlowComment		

Figure 4 SeaPlow Plow Device Status View – Decoded and Published Data

- b. Selecting the top of the tree (e.g. SeaPlow) displays the decoded data in the right panel in the units and number of decimal places expected based on the documentation provided
- c. Expanding the branches in the tree (e.g., Altitude, Heading, etc.) lists the respective observation that are published and available for use elsewhere in NavView such as Text views and Data Recording



# 1.6 Input Telegram

SeaPlow VIII Plow Message to NavView			
Field	Format	Description	
1	\$SPVIII	Message header	
2		Port pull (SeaPlow uses a tow bridal connected port and starboard)	
3		Starboard pull (SeaPlow uses a tow bridal connected port and starboard)	
4		As laid tension	
5		Depressor height	
6		Trench depth	
7		Plow pitch	
8		Plow roll	
9		Plow depth	
10		Forward port skid height	
11		Forward starboard skid height	
12		Aft port skid height	
13		Aft starboard skid height	
14		Plow heading	
15		Plow altitude	
16		Plow speed	
17		Plow travel	
18		Ship tow cable tension	
19		Ship tow cable count	
20		Burial depth	
21		Telemetry to the plow	
22		Tow cable angle (deflection of tow cable from straight ahead of plow)	
23		Tow steer angle (angle of plow steering mechanism)	
24		Plow comment	
25	<cr><lf></lf></cr>	Carriage return Line feed	

# 1.7 Output Telegram

NavView to SeaPlow VIII Plow Message			
Field	Format	Description	
1	\$WFSP	Header	
2		ROV reference vehicle heading, i.e. towing ship's heading	
3		ROV reference vehicle speed, i.e. towing ship's speed	
4		LCE cable tension	
5		LCE cable count	
6	<cr><lf></lf></cr>	Carriage Return Line Feed	