Argo program IDG SOLO Engineering Table **TS-12b** **Last updated October 24th, 2011 Adapted from SBE601 SOLO Rev.1.7 10 May 2007** **John Gilson**	
	Cycle 0 (diagnostic dive "C" message)
Char	**Contents**
1	ID: Diagnostic message identifier 'C'
2-3	LIMsw: 8 bits of limit switch status. Bit 0 = LSB Bits 7,6 IN,OUT state at start of BiT (Built-in-Test) Bits 5,4 IN,OUT state at end of BIT Bits 3,2 IN,OUT state when mission starts Bits 1,0 IN,OUT state at 1st surface XMIT
4-6	SPRXL: BIT pressure counts after resetoffset ARGO TECHNICAL NAME: PRES_SurfaceOffsetAfterReset_dBAR
7-9	diagP0: Pressure counts when "in water" sensed. ARGO TECHNICAL NAME: PRES_WhenInWaterSensed_dBAR
11-13	diagT0: Temperature counts when "in water" sensed. ARGO TECHNICAL NAME: TEMP_WhenInWaterSensed_DegC
14-17	diagS0: Salinity counts when "in water" sensed. ARGO TECHNICAL NAME: PSAL_WhenInWaterSensed_PSU
18-20	diagP1: Shallowest pressure counts in profile ARGO TECHNICAL NAME: PRES_ShallowestInProfile_dBAR
21-24	diagT1: Shallowest temperature counts in profile ARGO TECHNICAL NAME: TEMP_ShallowestInProfile_DegC
25-28	diagS1: Shallowest salinity counts in profile ARGO TECHNICAL NAME: PSAL_ShallowestInProfile_PSU
29-30	BTVac: Built-in-Test vacuum at startup (0.01 inHg)
31-32	VACb: Internal vacuum before fill air bladder (0.1 inHg) ARGO TECHNICAL NAME: PRESSURE_InternalVacuumAirBladderEmpty_inHG
33-34	VACa: Internal vacuum after fill of air bladder (0.1 inHg) ARGO TECHNICAL NAME: PRESSURE_InternalVacuumAirBladderFull_inHG
35-36	BTPcur: Built-in-Test mtor current OUT at startup (mA=10*BPcur)
37-38	OUTcur: Motor current OUT to ascend (mA=10*OUTcur)
39-41	BTPsecs: BIT motor seconds OUT at startup
42-44	Insecs: motor seconds IN to sink
45-47	OUTsecs: motor seconds OUT to ascend
48-49	Btpb: BIT pump battery at startup (LSB=0.1V)
50-51	Vple: Pump batter at end ASCEND (LSB=0.1V) ARGO TECHNICAL NAME: VOLTAGE_PumpBatteryLoad_VOLTS
52-53	Btcp: Built-in-Test CPU battery at startup (LSB = 0.1V)
54-55	Vcpu: CPU battery voltage counts (LSB=0.1V) on surface at start of Xmit after data processed ARGO TECHNICAL NAME: VOLTAGE_BatteryCPU_VOLTS
56-59	Stsecs: .01*(seconds from BIT bladders empty to start of mission)
60-62	DURsecs: .01*(seconds from start of mission to end of 1st profile)

	Standard dive "E" message)
Char	**Contents**
1	ID: engineering message identifier 'E'
2	BST 4-bit status of miscellaneous operations ARGO TECHNICAL NAME: STATUS_MiscellaneousOperations_NUMBER
3-6	P1: Pressure at the start of ascent ARGO TECHNICAL NAME: PRES_AscentToSurfaceStart_dBAR
7-10	T1: temperature at the start of ascent ARGO TECHNICAL NAME: TEMP_AscentToSurfaceStart_degC
11-14	S1: Salinity at the start of ascent ARGO TECHNICAL NAME: PSAL_AscentToSurfaceStart_PSU
15-18	SBNscan: # scans recorded by SBE CTD (1 Hz) ARGO TECHNICAL NAME: TIME_ProfileDuration_SECONDS
19	Sbntry: Number of tries to start SBE
20	Sbstat: SBE Start/stop status
21-22a	VACb: Internal vacuum before fill air bladder (0.1 inHg) ARGO TECHNICAL NAME: PRESSURE_InternalVacuumSleeveBladderEmpty_inHG
22b-24a	VACa: Internal vacuum after fill of air bladder (0.1 inHg) ARGO TECHNICAL NAME: PRESSURE_InternalVacuumSleeveBladderFull_inHG
24b	LIMsw: Pair of limit switch staus (In lim @ XMIT start, OUT lim @ascend start) ARGO TECHNICAL NAME: STATUS_LimitSwitchINAtSurfaceStartXmit_NUMBER & STATUS_LimitSwitchOUTAtStartAscent_NUMBER
25-26	PMPc: Pump motor current taken at the end of pumping at the start of ascent (mA=10*PMPc) ARGO TECHNICAL NAME: CURRENT_MotorStartProfile_mAMPS
27-28	Vcpu: CPU battery voltage counts (LSB=0.1V) on surface at start of Xmit after data processed (LSB=0.1 V) ARGO TECHNICAL NAME: VOLTAGE_BatteryCPUStartXmit_VOLTS
29-30	Vpmp: Pump Battery voltage on last reading before surface (LSB=0.1Volts) ARGO TECHNICAL NAME: VOLTAGE_BatteryPumpLastValueAsAscends_VOLTS
31-34	Savg1: Averge S counts over the first half of drift time. Trajectory Measurement.
35-36	DS: Change in S counts in second half of drift time (from first half). Trajectory Measurement.
37-38	num_bad: Number of bins in the profile with invalid data. ARGO_TECHNICAL_NAME: NUMBER_BinsWithBadData_COUNT
39-41	ATE: Air pressure inside float at the end of the preivous cycles surface interval.
42-44	ATS: Air pressure inside float at the start of the current cycles surface interval.
45-47	PFS: Pressure counts at the start of the SOLO falltime, after any reset of pressure offset. Gain of PFS = 50 ARGO TECHNICAL NAME: PRES_SurfaceOffsetAfterReset_dBAR
48-50	PFE: Pressure counts at the end of the SOLO fall time ARGO TECHNICAL NAME: PRES_DescentToParkEnd_dBAR
51-53	PRE: Pressure counts at the end of the SOLO rise time ARGO TECHNICAL NAME: PRES_AscentToSurfaceEnd_dBAR
54-56	TSK: seconds that piston ran during first settling (SEEK) cycle. ARGO TECHNICAL NAME: TIME_PistonRanDuringFirstSeek_SECONDS
57-59	PSK: (signed) dBAR change in 1st settling cycle (SEEK) ARGO TECHNICAL NAME: PRESSURE_ChangeInFirstSeek_SECONDS

60-62	TIP: Secons to run piston UP to get to SEEK depth. ARGO TECHNICAL NAME:TIME_PistonRanDuring DescentFrom100db_SECONDS
	Other Technical information found in other SOLO messages
Msg	**Contents**
2	SPRX: Average P counts at the surface at the end of transmitting in the previous cycle before any reset. Gain of SPRX = 50. ARGO TECHNICAL NAME: PRES_SurfaceOffsetBeforeReset_dBAR
2	FallT: 0.01* (seconds elapsed from opening of air valve to sinking from surface to 50dbar ARGO TECHNICAL NAME: TIME_DescentTo50Decibars_SECONDS
3	Err: 4-bit error code. signifying a spurious interrupt, stack overflow or spurious reset. ARGO TECHNICAL NAME: FLAG_ErrorCode_NUMBER
3	Imin: Minimum depth bin with valid data according to the float ARGO TECHNICAL NAME: NUMBER_MinimumDepthBinWithValidData_COUNT
3	Bmax: Maximum depth bin with valid data according to the float ARGO TECHNICAL NAME: NUMBER_MaximumDepthBinWithValidData_COUNT