

NMEA 0183 Sentences Not Recommended for New Designs

Approved by the NMEA 0183 Standard Committee

as of

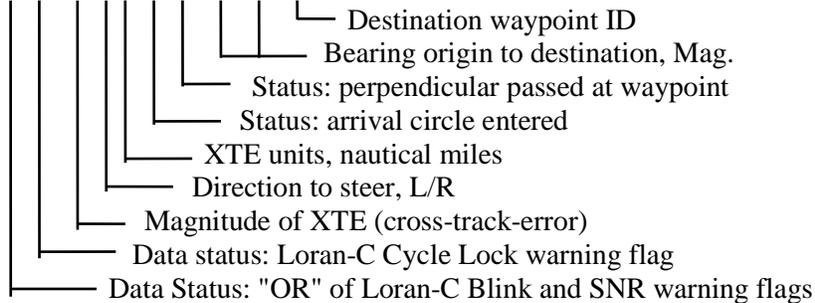
October 1, 2008

APA - Autopilot Sentence "A"

Commonly used by autopilots this sentence contains navigation receiver warning flag status, cross-track-error, waypoint arrival status and initial bearing from origin waypoint to the destination waypoint for the active navigation leg of the journey.

Use of **\$--APB** with additional data fields of heading-to-steer and bearing from present position to destination is recommended.

\$--APA,A,A,x,x,a,N,A,A,x,x,M,c--c*hh<CR><LF>



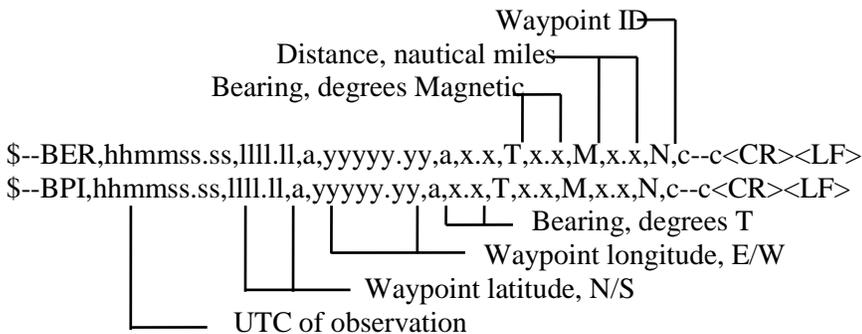
BER - Bearing & Distance to Waypoint, Dead Reckoning, Rhumb Line

BPI - Bearing & Distance to Point of Interest

Time (UTC) and distance & bearing to, and location of, a specified waypoint from present position:

BER: Calculated along the rhumb line from a dead reckoned present position. The use of **\$--BEC** using great circle calculations is recommended.

BPI: Calculated along a great circle path from a measured present position. Redundant with BWC, the use of **\$--BWC** is recommended.



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DBK - Depth Below Keel

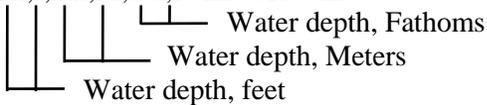
DBS - Depth Below Surface

Water depth referenced to the vessel's keel (DBK) or to the water surface (DBS).

The use of \$--DPT is recommended in place of either of these.

\$--DBK,x.x,f,x.x,M,x.x,F*hh<CR><LF>

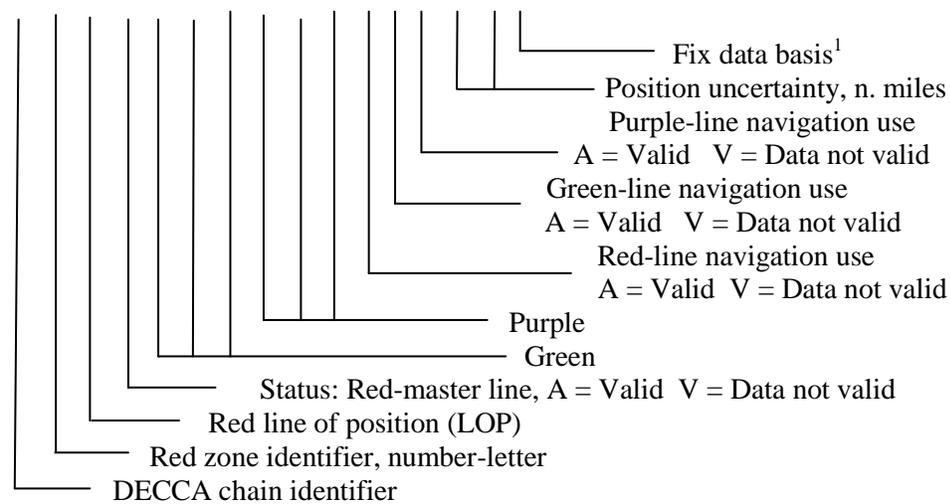
\$--DBS,x.x,f,x.x,M,x.x,F*hh<CR><LF>



DCN – DECCA position

Status and lines-of-position for a specified DECCA chain.

\$ -- DCN,xx,cc,x.x,A,cc,x.x,A,cc,x.x,A,A,A,x.x,N,x*hh<CR><LF>



Notes Fix data basis:

- 1 = Normal pattern
- 2 = Lane identification pattern
- 3 = Lane identification transmissions

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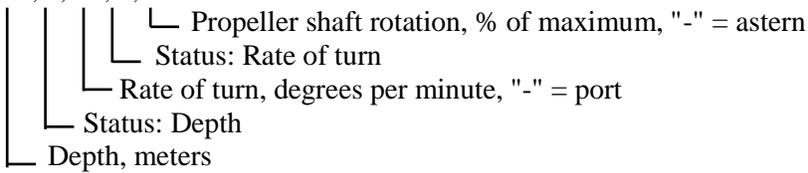
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DRU - Dual Doppler Auxiliary Data

Depth, turn rate and % RPM in support of Doppler velocity systems.

The use of **\$--DPT** is recommended for depth data, **\$--RPM** for shaft rotation and **\$--ROT** for rate of turn.

`$--DRU,x.x,A,x.x,A,x.x*hh<CR><LF>`



GDa - Dead Reckoning Positions

GLa - Loran-C Positions

GOa - OMEGA Positions

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GXa - TRANSIT Positions

Location and time at waypoint "c--c":

\$--aF: predicted or estimated time

\$--aaP: present position and time

\$--aaA: past position and time

The use of waypoint location \$--WPL (for past positions) or \$--GLL (for present position) followed by time tag \$--ZDA is recommended for reporting past or present waypoint times; \$--WPL followed by \$--ZTG is recommended for estimated time.

Dead reckoned positions:

\$--GDF,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c*hh<CR><LF>

\$--GDP,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c*hh<CR><LF>

\$--GDA,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c*hh<CR><LF>

Loran-C determined positions:

\$--GLF,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c*hh<CR><LF>

\$--GLP,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c*hh<CR><LF>

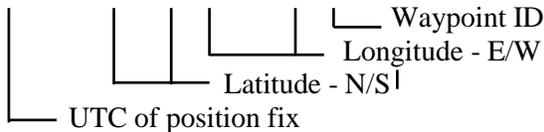
\$--GLA,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c*hh<CR><LF>

Omega determined positions:

\$--GOF,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c*hh<CR><LF>

\$--GOP,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c*hh<CR><LF>

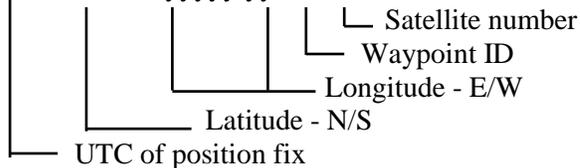
\$--GOA,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c*hh<CR><LF>



TRANSIT determined positions:

\$--GXF,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c,x*hh<CR><LF>

\$--GXP,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c,x*hh<CR><LF>



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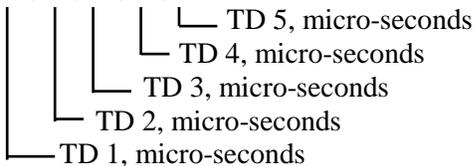
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GTD - Geographical Position, Loran-C TDs

Loran-C Time Difference (TD) lines of position for present vessel position.

The use of **\$--GLC** is recommended.

\$--GTD,x.x,x.x,x.x,x.x,x.x,x.x*hh<CR><LF>

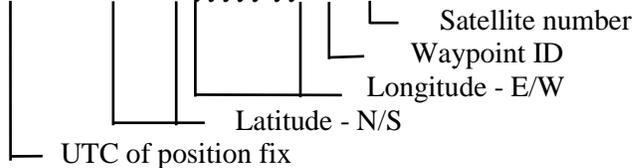


GXA - TRANSIT Position

Location and time of TRANSIT fix at waypoint "c--c".

TRANSIT system is not operational, no recommended replacement.

\$--GXA,hhmmss.ss,llll.ll,a,yyyyy.yy,a,c--c,x*hh<CR><LF>

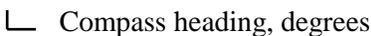


HCC - Compass Heading

Vessel compass heading, which differs from magnetic heading by the amount of uncorrected magnetic deviation.

The use of **\$--HDG** is recommended.

\$--HCC,x.x*hh<CR><LF>

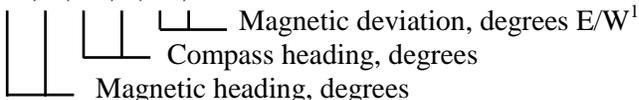


HCD - Heading and Deviation

Actual vessel magnetic heading, indicated compass heading and the difference (deviation) between them.

The use of **\$--HDG** is recommended.

\$--HCD,x.x,M,x.x,H,x.x,a*hh<CR><LF>



Notes:

- 1) Easterly deviation (E) subtracts from Compass Heading
Westerly deviation (W) adds to Compass Heading

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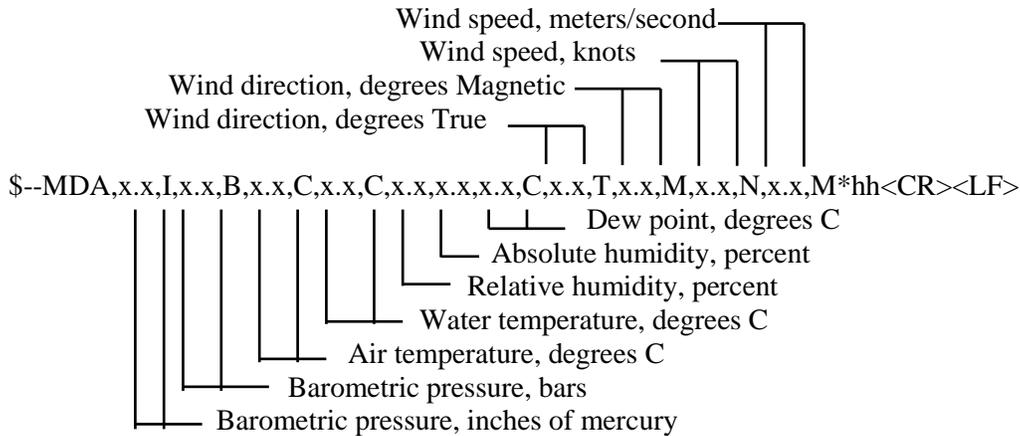
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MDA - Meteorological Composite

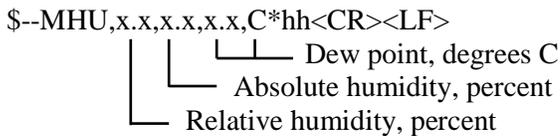
Barometric pressure, air and water temperature, humidity, dew point and wind speed and direction relative to the surface of the earth.

The use of \$--MTW, \$--MWV and \$--XDR is recommended.



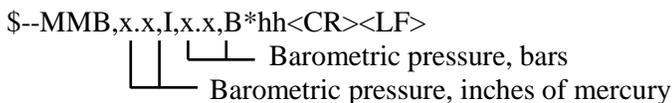
MHU - Humidity

The use of \$--XDR is recommended.



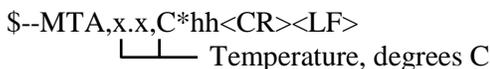
MMB - Barometer

The use of \$--XDR is recommended.



MTA - Air Temperature

The use of \$--XDR is recommended.



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SDB - Loran-C Signal Strength

Limited utility, no recommended replacement.

\$--SDB,x.x*hh<CR><LF>

└─ Signal strength, dB

SGD - Position Accuracy Estimate

Estimate of position accuracy based on geometric dilution of precision (GDOP) and system noise, in feet and nautical miles.

Limited utility, no recommended replacement.

\$--SGD,x.x,N,x.x,f*hh<CR><LF>

┌┐┌─ Accuracy, feet

└─ Accuracy, nautical miles

SGR - Loran-C Chain Identifier

The unique Loran-C Chain identifier, representing Group Repetition Interval (GRI) in tens of microseconds (Group Repetition Interval = {Chain ID}*10, microseconds).

The use of \$--GLC is recommended.

\$--SGR,xxxx*hh<CR><LF>

└─ GRI, tens of microseconds

SIU - Loran-C Stations in Use

The use of \$--GLC is recommended.

\$--SIU,1,2,3,4,5,6,7,8*hh<CR><LF>

┌──────────┐ Stations in use, null fields for stations not in use

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SSF - Position Correction Offset

Amount of offset, and direction of offset, applied to measured position Lat/Lon to produce a displayed position Lat/Lon. Limited utility, no recommended replacement.

\$--SSF,x.x,a,x.x,a*hh<CR><LF>

┌┌ Longitude offset, minutes E/W
└└ Latitude offset, minutes N/S

STC - Time Constant

Time constant specified manually for use in navigation calculations. Limited utility, no recommended replacement.

\$--STC,xxx*hh<CR><LF>

└ Time constant, 000 to 999 seconds

STR - Tracking Reference

Transmitted prior to a sentence containing velocity-based data to indicate when velocity is measured over-the-ground or relative to the water.

The use of appropriate ground or water-referenced approved sentences such as \$--VBW, \$--VHW or \$--VTG is recommended.

\$--STR,a*hh<CR><LF>

└ A = Ground reference, V = Water reference

SYS - Hybrid System Configuration

Limited utility, no recommended replacement.

\$--SYS,L,O,T,G,D*hh<CR><LF>

┌ DECCA
└ GPS
└ TRANSIT
└ OMEGA
└ LORAN-C

Null fields for systems not in use

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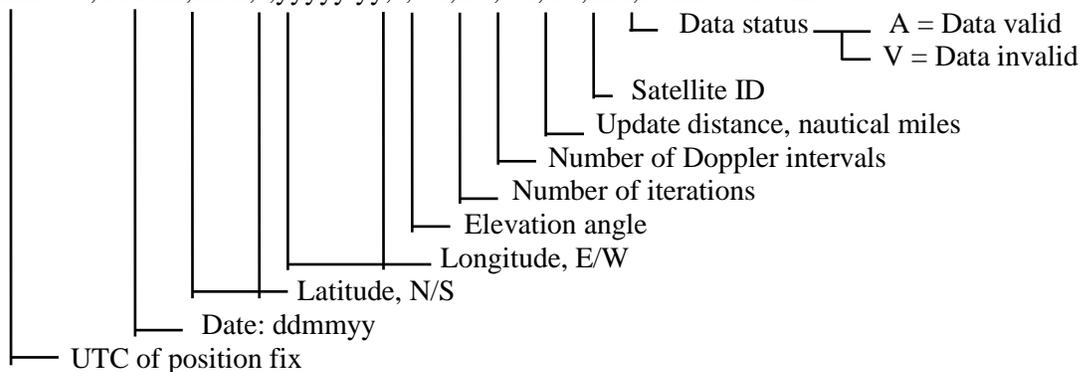
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TRF - TRANSIT Fix Data

Time, date, position and information related to a TRANSIT fix.

TRANSIT system is not operational, no recommended replacement.

\$--TRF,hhmmss.ss,xxxxxx,llll.ll,a,yyyy.yy,a,x.x,x.x,x.x,x.x,xxx,A*hh<CR><LF>



TRP - TRANSIT Satellite Predicted Direction of Rise

TRANSIT system is not operational, no recommended replacement.

\$--TRP,aa*hh<CR><LF>

└ Southeasterly = SE, southwesterly = SW

TRS - TRANSIT Satellite Operating Status

TRANSIT system is not operational, no recommended replacement.

\$--TRS,a*hh<CR><LF>

└ Acquiring = A Calculating = c Error = e
 Message = m Test = T Dead reckoning = U

VCD - Current at Selected Depth

Limited utility, no recommended replacement.

\$--VCD,x.x,f,x.x,M,x.x,N,x.x,M*hh<CR><LF>

└ Current, meters/second
 └ Current, knots
 └ Depth, feet and meters

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VPE - Speed, Dead Reckoned Parallel to True Wind

Limited utility, no recommended replacement.

\$--VPE,x.x,N,x.x,M*hh<CR><LF>

Speed, meters/second, "-" = downwind
Speed, knots, "-" = downwind

VTA - Actual Track

Limited utility, possible use of \$--VTG for a portion of the data.

\$--VTA,x.x,T,x.x,M,x.x,N,x.x,N*hh<CR><LF>

Distance made good, naut. miles
Speed made good, knots
Track made good, degrees Magnetic
Track made good, degrees True

VTI - Intended Track

Limited utility, no recommended replacement.

\$--VTI,x.x,T,x.x,M,x.x,N,x.x,N*hh<CR><LF>

Distance made good, naut. miles
Speed made good, knots
Intended track, degrees Magnetic
Intended track, degrees True

VWE - Wind Track Efficiency

Limited utility, no recommended replacement.

\$--VWE,x,x*hh<CR><LF>

Efficiency, percent

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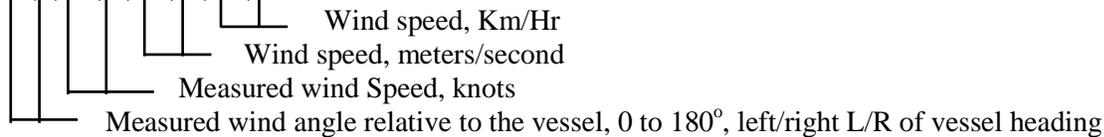
October 1, 2008

VWR - Relative (Apparent) Wind Speed and Angle

Wind angle in relation to the vessel's heading and wind speed measured relative to the moving vessel.

The use of \$--MWV is recommended.

\$--VWR,x,x,a,x,x,N,x,x,M,x,x,K*hh<CR><LF>

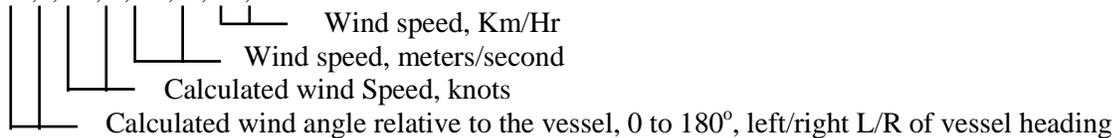


VWT - True Wind Speed and Angle

True wind angle in relation to the vessel's heading and true wind speed referenced to the water. True wind is the vector sum of the Relative (Apparent) wind vector and the vessel's velocity vector relative to the water along the heading line of the vessel. It represents the wind at the vessel if it were stationary relative to the water and heading in the same direction.

The use of \$--MWV is recommended.

\$--VWT,x,x,a,x,x,N,x,x,M,x,x,K*hh<CR><LF>

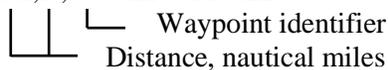


WDC - Distance to Waypoint

Distance from present position to the specified waypoint.

The use of \$--BWC is recommended.

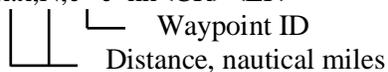
\$--WDC,x,x,N,c--c*hh<CR><LF>



WDR - Waypoint Distance, Rhumb Line

The use of \$--WDC using great circle calculations is recommended.

\$--WDR,x,x,N,c--c*hh<CR><LF>



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WFM - Route Following Mode

Limited utility, no recommended replacement.

\$--WFM,a*hh<CR><LF>

└ Mode: "A" = automatic, "V" = manual

WNR - Waypoint-to-Waypoint Distance, Rhumb Line

The use of \$--WNC using great circle calculations is recommended.

\$--WNR,x.x,N,x.x,K,c--c,c--c*hh<CR><LF>

└ FROM waypoint ID
└ TO waypoint ID
└ Distance, kilometers
└ Distance, nautical miles

YWP - Water Propagation Speed

Limited utility, no recommended replacement.

\$--YWP,x.x,f,x.x,M*hh<CR><LF>

└ Speed, meters/second
└ Speed, feet/second

YWS - Water Profile

Limited utility, no recommended replacement.

\$--YWS,x.x,x.x,x.x,C,x.x,f,x.x,M*hh<CR><LF>

└ Depth, meters
└ Depth, feet
└ Temperature at depth, degrees C
└ Chlorinity, parts/thousand
└ Salinity, parts/thousand

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ZCD - Timer

Limited utility, no recommended replacement.

```
$--ZCD,xxxxxx,a*hh<CR><LF>
```

└─ Control: "+" = count up
 "-" = count down
 "V" = stop count
└─ Timer initial value, seconds

ZEV - Event Timer

Limited utility, no recommended replacement.

```
$--ZEV,hhmmss.ss,hhmmss.ss,a,c-c*hh<CR><LF>
```

└─ UTC
 └─ Timer initial value
 └─ Waypoint ID
 └─ Control: "+" = count up
 "-" = count down
 "V" = stop count

ZLZ - Time of Day

Time of day in hours-minutes-seconds, both with respect to (UTC) and the local time zone.

The use of \$--ZDA is recommended.

```
$--ZLZ,hhmmss.ss,hhmmss.ss,xx*hh<CR><LF>
```

└─ UTC
 └─ Local time
 └─ Local zone description¹, 00 to 12

Notes:

1) Zone description is the number of whole hours added to local time to obtain GMT, Zone description is negative for East longitudes.

ZZU - Time, UTC

The use of \$--ZDA is recommended.

```
$--ZZU,hhmmss.ss*hh<CR><LF>
```

└─ UTC