

Basic Geodesy

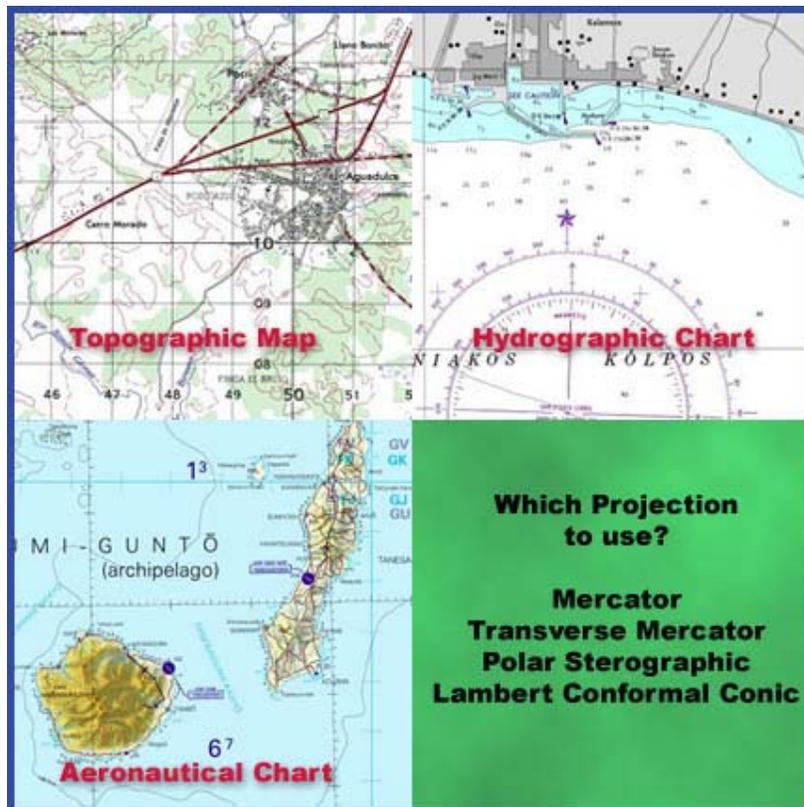
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Projections and NGA Products

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The purpose of this article is to clear up some of the confusion concerning which projection(s) should be used with various NGA products. Table 1 on the second page lists common NGA products and the preferred projection(s) for them. This table is not comprehensive and in some rare cases, the customer may have a specific need for a tailor-made product with a non-standard projection. It is also further broken down by type of product (Topographic maps, Hydrographic charts, Aeronautical charts).



Please be aware that foreign countries may use other projections for their maps and charts. If you have questions or issues regarding projections or other geodetic questions, please contact the East or West CSAT (Coordinate System Analysis Branch) at 301-227-3340 or 314-263-4171. Thank you to Diane Lapinski from CSAT West for providing information regarding Aeronautical products and Kent Faughander from the Bethesda Maritime Operations Division for the information regarding Hydrographic products.

Next Article

The next article will focus on the purpose for map grids and begin introducing some of the terminology and parameters of the various grid systems.

continued on page 2

Table 1

Topographic Products	Scale	Projection	Comments /Exceptions
TLM50 (Topographic Line Map 50,000 Scale)	1:50,000	Transverse Mercator	Polar Stereographic used for areas above 84° North and below 80° South
TLM100 (Topographic Line Map 100,000 Scale)	1:100,000	Transverse Mercator	Same as above
JOG (Joint Operation Graphic)	1:250,000	Transverse Mercator	Versions of JOG's - Ground, Air (Aeronautical), Radar
City Graphics	Various Scales; 1:7,500 - 1:35,000	Transverse Mercator	
ICM (Image City Maps)	Various Scales; 1:2,500 - 1:15,000	Transverse Mercator	
Small Scale (World Scale) Briefing Graphics	Various Scales; 1:750,000 - 1:10,000,000	Mercator or Lambert Conformal Conic	Lambert Conformal Conic preferred for large East-West areas (Miller projection sometimes used)
Hydrographic Products	Scale	Projection	Comments/Exceptions
Harbor Charts	>1:50,000	Mercator	Areas 70° and higher and do not cover a pole use Transverse Mercator or Lambert Conformal; areas 70° and higher and do cover a pole use Polar Stereographic
Approach Charts	1:25,000 to 1:100,000	Mercator	Same as above
Coastal Charts	1:75,000 to 1:500,000	Mercator	Same as above
General Charts	< 1:500,000	Mercator	Same as above
Littoral Warfare Charts	1:50,000 and 1:25,000	Transverse Mercator	Also referred to as Combat Charts
Fleet Operating Area Charts	Various Scales	Mercator	This product uses an Approach, Coastal or General chart for a base and overlays Operations Areas on it.
Bathymetric Navigation Planning Charts	One ° Long. = 8" Above 65°, One ° Long. = 4"	Mercator	
Bottom Contour Charts	One ° Long. = 4" Above 65°, One ° Long. = 2"	Mercator	
Aeronautical Products	Scale	Projection	Comments/Exceptions
JOG-A (Joint Operation Graphic)	1:250,000	Transverse Mercator	84N-90N & 80S-90S Polar Stereographic
TPC (Tactical Pilotage Chart)	1:500,000	Lambert Conformal Conic	80N-90N & 72S-90S Polar Stereographic
ONC (Operational Navigation Chart)	1:1,000,000	Lambert Conformal Conic	80N-90N & 72S-90S Polar Stereographic
JNC (Jet Navigation Chart)	1:2,000,000	Lambert Conformal Conic	JNC 4-7 & 120-125 Transverse Mercator
GNC (Global Navigation Chart)	1:5,000,000	Lambert Conformal Conic	GNC 1 & 26 Transverse Mercator