



NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY

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S-127 Test Data Set Expansion

Michael Kushla/Jason Strom

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Background

- Canadian Hydrographic Service (CHS) requested the S-127 (Marine Traffic Management) Test Data Set be expanded to include bridges, canals, and locks.
- NIPWG Chair delegated NGA to research the request and provide further information to NIPWG.
- E-mail exchanges and a virtual session facilitated the development of the expanded Test Data Set
- NGA thanks CHS, Traficom (Finland), BSH (Germany), Portolan Science (US), and NOAA (US) for their valuable input.



Analysis and Discussions

- What types of traffic management system covered by S-127 would be required:
 1. Passive system—No interaction between the vessel and a shore-based authority.
 2. Active system—Required interaction between the vessel and a shore-based authority.
- Initial determination—All three proposed additions (bridges, canals, and locks) would be active systems. All would require a vessel interaction with a shore-based authority.



Step 1—Information Needed

- Determine what information is required for the expanded Test Data Set:
 1. Currently available:
 - Hours of operation.
 - Advance notification requirements.
 - Contact information.
 - Vessel limitations.
 - Signals.
 2. Need development (may be covered by S-101):
 - Clearances.
 - Bridge types.



Step 2—Include Canals?

- Reviewed NGA Sailing Directions and UKHO Radio Aids (Series 286) for existing marine safety information or existing reporting systems.
- Six major canal systems were analyzed. All were covered by an existing Vessel Traffic Management System (VTMS), Vessel Traffic Service (VTS), or Reporting System.
- Canals sufficiently covered by existing S-127 Product Specifications.



Step 2 (continued)—Include Bridges/Locks?

- Not covered by S-127 or other Product Standards/ Specifications.
- Add Bridges/Locks to the S-127 Test Data Set.



Bridges/Locks Requirements

(This table provided the guidance for developing the expanded entries
(Bridges/Locks) in the S-127 Test Data Set.

S-127 Bridges/Locks Expansion Requirements			
Item	Bridges	Locks	Remarks
Name	X	X	
Location	X	X	
Operating Authority	X	X	
Bridge Type	X	N/A	Fixed, bascule, swing, lift, moveable pontoon, etc.
Clearances	X	N/A	Horizontal, vertical (open position) and vertical (closed position).
Lock Dimensions	N/A	X	Width, length, depth over the sill, etc.
Vessel Limitations	X	X	Bridge—Size, draft, loa, beam, air draft, etc., as appropriate. Lock—Vessel length and breadth.
Operating Hours	X	X	
Signals	X	X	Visual and sound
Contact Information	X	X	Call sign, VHF and other radio channels, telephone, facsimile, e-mail, web site, etc.



NIPWG Members Review/Input

- First and second drafts provided to participating NIPWG members.
- E-mail exchanges and a virtual meeting session resulted in the following changes added to the documents:
 1. A more specific operating authority for the bridge and locks.
 2. Bridge authority changed from “bridge operator” to “bridgetender.”
 3. Bridge operating times specified as local time.
 4. Bridge operating times rewritten to avoid 2400/0000 crossover.
 5. Specified bridge advance notice requirements sent to the bridgetender.
 6. Added vessels limitations for the locks.
 7. Amended lock operating hours to include seasonal/weekend operating hours and closures.
 8. Added a table depicting the visual signals at the locks.



Conclusions

- **Bridges**—Include in S-127 Test Data Set. Is an Active System. Only a single new Product Specification is needed, even in the event of multiple bridges.
- **Locks**—Include in S-127 Test Data Set. Is an Active System. Only a single new Product Specification is needed, even in the event of multiple locks.
- **Canals**—Do not include in S-127 Test Data Set. Existing VTMS, VTS, and Reporting Systems cover the requirements for canal-related Product Specifications.
- NIPWG 8-xx includes the current draft of the new entries for Bridges (Appendix 1) and Locks (Appendix 2).