Recommendation 5 from the 1st High-Resolution Marine Meteorology Workshop (3-5 March 2003, Florida State University, Tallahassee) was to:

"Produce a reference manual of best procedures and practices for the observation and documentation of meteorological parameters, including radiative and turbulent fluxes, in the marine environment. The manual will be maintained online and will be a resource for marine weather system standards."

We present below a proposed synopsis of material to be included in the Manual, and invite discussion.

**Guide to Marine Meteorological Observation and Flux Measurement**

**Introduction**
- Motivation for this Handbook
- Who it is aimed at
- Consider basic variables and bulk fluxes
- Covariance methods not considered

**Basic variables input to bulk flux algorithm**
- $T_a, T_s, q_a, u, u_s$
- Issues with each, required accuracy
- Sea temperature and SST
- Radiative variables

**Meteorological sensors**
- Types for each variable, pros and cons
- Practical issues of deployment on ships
- Location
- Standard height
- Accuracy and reliability
- Drift and deterioration at sea
- Ventilation

**Radiometry**
- Shortwave (direct, diffuse)
- Longwave
- Albedo and emissivity
- Shortwave absorption with depth

**Precipitation**
- Characteristics and variability
- Sensors

**Specific shipboard and buoyboard problems**
- Flow distortion
- Heat distortion (air and sea)
- Motion

**Bulk Flux algorithms**
- Different models and characteristics
- Wind-speed relative to water surface
- Need for ship navigation variables; position, heading and course
- Refinements (cool skin and warm layer models; wave effects)
- Long and shortwave parameterizations

**Instrument calibration**
- Calibration standards; traceable
- Procedures and schedules

**Intercomparisons**
- Ship-ship and ship-buoy planning
- Portable secondary standards

**Observational procedures**
- Event logging
- Real-time data monitoring
- Visual records (clouds, sea-state)

**Documentation**
- Sensor calibration and deployment history
- Desirable metadata
- Digital photographs

**Data archiving**
- Standardization of formats
- Uniformity of editing
- Photographs stored with data

**Appendix 1 - algorithms**
- Relative to true wind plus current
- $R_s, R_l$ models from cloud observations
- Humidity units conversion
- Teten’s formula for moist air
- Formulae for $C_p, L$ etc.
- Constants

**Appendix 2 Sources of information**
- HRMM Data Centre
- Etc.

**References**