SAMPLE OCEANIC CHECKLIST as of 30 October 2017

Note: ICAO North Atlantic Working Groups composed of industry, ATC and state regulators have created this checklist **for reference only.** It is not intended to replace an operator's oceanic checklist. Operators should use an Oceanic Checklist as part of their Safety Management System. Operators without an oceanic checklist are encouraged to use this sample and tailor it to their specific needs and approvals. This checklist provides an orderly flow of tasks designed to assist in reducing oceanic errors. Operators should also review the **attached expanded checklist**. Headings in **BLUE** are hyperlinked to more detailed information in the expanded checklist. The Oceanic Errors Safety Bulletin (OESB) and the North Atlantic Operations and Airspace Manual (NAT Doc 007) should be used together with this checklist. The OESB and NAT Doc 007 can be found in the "NAT Documents" folder under the "EUR/NAT Documents" page at **https://www.icao.int/EURNAT/Pages/welcome.aspx**.

FLIGHT PLANNING

- Communication/Navigation/Surveillance (CNS) Flight Plan Codes and planning documents
  - Plotting/Orientation Chart – plot route coast out to coast in
- Equal Time Points (ETP) - plot
- EDTO (/ETOPS) – Complete analysis
- Track message (current copy available for all crossings)
  - Note nearest tracks on plotting chart
- Weather Analysis – Note enroute temperature and turbulence forecasts as well as divert airport weather
- Review possible navigation aids for accuracy check prior to coast out
  - Review contingency procedures and plans

PREFLIGHT

- Master Clock for all ETAs/ATAs
- Maintenance Log – check for any navigation/ communication/surveillance or RVSM issues
- RVSM Altimeter checks (tolerance)
- Operational Flight Plan (OFP) vs ATS Flight Plan (check routing, fuel load, times, groundspeeds)
- Dual Long Range NAV System (LRNS) for remote oceanic operations
- LRCS (HF, SATCOM) check (including SELCAL
- Confirm Present Position coordinates (best source)
- Master Document (symbols②, ✓, \, X)
- LRNS programming
  - Check currency and software version
  - Independently verify waypoint entries
  - Check expanded coordinates of all oceanic waypoints
  - Check course and distance (± 2˚ and ±2 NM)
  - Upload winds, if applicable
- Groundspeed check

TAXI AND PRIOR TO TAKE-OFF

- Groundspeed check
- Present Position check

CLIMB OUT

- Verify ETAs above FL180

PRIOR TO OCEANIC ENTRY

- If required, obtain oceanic clearance from appropriate agency. Verify and crosscheck independently. Confirm the ATC route clearance is properly programmed into LRNS
- Check expanded coordinates of all oceanic waypoints
- Confirm flight level, Mach and route for crossing
- If applicable, **request and receive clearance**, to comply with oceanic clearance (e.g., **higher FL**) **from domestic ATC**

  Note: Altitudes in oceanic clearances are **not** "when ready climb" instructions: coordinate with domestic ATC
- Ensure aircraft performance capabilities for maintaining assigned altitude/assigned Mach
- If clearance is not what was filed – update LRNS, OFP and plotting/ orientation chart, check course and distance for new route. Independently crosscheck and confirm new route
- Navigation Accuracy Check – record as applicable
- Confirm HF check, if not done during pre-flight
- Confirm SATCOM/SATVOICE is operational, as applicable
- Log on to CPDLC and ADS-C 10 to 25 minutes prior, if equipped
- Verify RNP value
- Altimeter checks – record readings
- Compass heading check – record

AFTER OCEANIC ENTRY

- Squawk 2000 – normally 30 minutes after entry, if applicable
- Maintain assigned Mach, if applicable
- VHF radios - set to air-to-air (123.45 MHz) and guard frequency (121.5 MHz)
- Strategic Lateral Offset Procedures (SLOP) – SOP fly centerline or 1NM or 2NM to the **right** of ATC cleared track; left offsets are **not** approved
- Altimeter checks - hourly
- Routine monitoring – assign tasks

APPROACHING WAYPOINTS

- Confirm latitude/longitude of next and subsequent points – expanded coordinates, using scratch pad of FMS if applicable

OVERHEAD WAYPOINTS

- Confirm aircraft transitions to next waypoint
  - Check track and distance against Master Document
- Confirm time to next waypoint

  Note: 3-minutes or more change requires ATC notification (NAT Region & voice reporting only)
- Position report – fuel

10-MINUTES AFTER WAYPOINT PASSAGE

- Record time and latitude/longitude on plotting/orientation chart – non steering LRNS

  - or -
- Use "nav display method" (FMS aircraft only, smallest scale)

MID POINT

- Midway between waypoints compare winds from OFP, LRNS and upper millibar wind charts
- Confirm ETA

COAST IN

- Compare ground based NAVAID to LRNS
- Remove SLOP offset prior to oceanic exit point
- Confirm routing beyond oceanic airspace

DESTINATION/BLOCK IN

- Navigation Accuracy Check
- RVSM write-ups

SAMPLE EXPANDED OCEANIC CHECKLIST as of 6 October 2017

Note: ICAO North Atlantic Working Groups composed of industry, ATC and state regulators have created this checklist **for reference only**. It is not intended to replace an operator's oceanic checklist. Operators should use an Oceanic Checklist as part of their Safety Management System. Operators without an oceanic checklist are encouraged to use this sample and tailor it to their specific needs and approvals. This checklist provides an orderly flow of tasks designed to assist in reducing oceanic errors. The Oceanic Errors Safety Bulletin (OESB) and the North Atlantic Operations and Airspace Manual (NAT Doc 007) should be used together with this checklist. The OESB and NAT Doc 007 can be found in the "NAT Documents" folder under the "EUR/NAT Documents" page at **https://www.icao.int/EURNAT/Pages/welcome.aspx**.

FLIGHT PLANNING

- Communication/Navigation/Surveillance (CNS) flight plan codes and planning documents

Review the ATS flight plan with emphasis on items 10A and B and Item 18. Ensure that the appropriate CNS and Performance-based Navigation codes are properly filed in field 10 and 18 of the flight plan. Each aircraft's MEL should be reviewed for system deferrals that may affect the CNS capabilities of the aircraft. The remarks and exceptions column should provide the specific guidance for flight plan filing. The operator's manual system should be updated if necessary to require flight plan amendments when CNS capabilities are changed during the preflight planning phase prior to departure. The manual should contain procedures for flight plan amendments and cancellations as appropriate.

- Oceanic documents

Operators are encouraged to develop a flight planning checklist, specific to the aircraft/ fleet, to ensure they have the necessary documents before departure. The checklist should include, but is not limited to, the following:

- ❖ Master Document (i.e., master operational flight plan)
- ❖ NOTAMs for departure, destination, alternate(s), Extended Diversion Time Operations (EDTO) alternates (as applicable) and oceanic FIRs
- ❖ Weather for departure, destination, alternate(s), EDTO alternates (as applicable)
- ❖ Track Message(s)
- ❖ SIG WX Chart
- ❖ ETP(s) Wind Tables or Millibar Charts for flight levels or altitudes
- ❖ GPS NOTAMs (as applicable)
- ❖ Volcanic Ash Information
- ❖ PIREPs
- ❖ Plotting/Orientation Charts
- ❖ AIREP Form (as applicable) for position report

***NOTE**: Items 10 and 18 of the ICAO Flight plan require more detail to indicate the operator's communication/navigation/surveillance capabilities and authorizations. These additional codes are necessary to meet performance based requirements and are noted in the ICAO PANS ATM (Doc 4444).*

- Plotting/Orientation chart

A plotting/orientation chart of appropriate scale should be used for oceanic operations. This includes using a plotting/orientation chart for published oceanic routes and tracks. ICAO groups who review oceanic errors have determined that the routine use of a plotting/orientation chart is an excellent aid to reduce lateral errors. A chart can also serve as a critical aid in case of partial or total navigation failure. It should be noted that the pilot should read from the chart back to the Master Document when verifying data. To read from the Master Document to the chart has led to errors based on "seeing what we expect to see" (expectation bias). Plot your *currently effective route clearance* from coast out to coast in. Be sure to update this whenever your route clearance changes.

- Equal Time Point (ETP)

ETPs should be computed for contingencies such as medical divert, engine loss or rapid depressurization. Performance with a simultaneous engine loss and rapid depressurization should also be calculated. It is advisable to note the ETPs on the plotting/orientation chart. Crewmembers should review with each other the appropriate diversion airport(s) when crossing ETPs. Pilot procedures should also include a manual method for computing ETPs. Crews should not enter

ETPs in the active route of the Long Range Navigation System (LRNS) as this could create spurious out-of-conformance alerts on ground-based monitoring systems, and could create confusion in the event of a revised route clearance.

- Extended Diversion Time Operations (EDTO) [see also Extended Twin Operations (ETOPS)]

Complete EDTO analysis. Verify EDTO alternates meet the appropriate limitations (120, 180, etc.). Identify EDTO entry and exit points.

- Contingency procedures and plans

Operators and flight crews should ensure they have the airspace-specific contingency procedures (for weather deviations and in-flight contingencies) as well as consider plans if any enroute diversion is required.

NOTE: Crews should make diligent attempts to comply with ATC clearances. If a given contingency requires deviation from the current clearance, timely and effective coordination can help reestablish a new ATC clearance for the changed flight profile.

- Track message

Crews shall[2] have a current track message even if filed for a random route or filed above North Atlantic High Level Airspace. Reviewing the date, effective Zulu time and Track Message Identifier (TMI) ensures having a current track message on board. The TMI is linked to the Julian Date. Operators must also ensure that their flight planning and operational control process notify crewmembers in a timely manner of any amendments to the daily track message. Plotting adjacent tracks and/or crossing tracks whilst on a random route can help situational awareness in case the crew needs to execute a contingency procedure.

- Weather analysis

Crews must note enroute temperature and turbulence forecasts as well as diversion/emergency airport weather, volcanic activity, magnetic storms, and solar flares affecting the route of flight.

- Review possible navigation aids for accuracy check prior to coast out

It is good practice to discuss in advance a primary and secondary ground based navigational aid that will be used to verify the accuracy of the LRNS. This planning may help to identify intended navigation aids that are limited or NOTAMed unusable and is helpful when departing airports close to oceanic airspace. Examples include Shannon (EINN), Lisbon (LPPT), Boston (KBOS), etc.

PREFLIGHT

- Master clock

It is a requirement to have a master clock on board synchronized to UTC or GPS. This time source, which is typically the Flight Management System (FMS), must be used for all ETAs and ATAs. The use of multiple time sources on the aircraft has led to inconsistencies in reporting times to ATC and resulted in a loss of longitudinal separation.

- Maintenance log

Before entering a special area of operation, crews should focus on any write-ups that affect communication, navigation, surveillance, EDTO, or RVSM requirements. Any discrepancies noted in the maintenance log or during the walk-around may require delays or rerouting.

- RVSM

Required equipment includes two primary independent altimetry sources, one altitude alert system and one automatic altitude control system. In most cases a functioning transponder that can be linked to the primary altimetry source is also required. Crews should note any issues that can affect accurate altimetry.

- Altimeter checks

Before taxi, crews should set their altimeters to the airport QNH. Both primary altimeters must agree within ± 75 feet of field elevation. The two primary altimeters must also agree within the limits noted in the aircraft operating manual.

[2] *Regional Supplementary Procedures* (Doc 7030) – NAT 6.4.1.2

- Wind shear or turbulence forecast

The Master Document with projected wind shear or the turbulence forecast documents for flights in RVSM airspace. Forecast severe turbulence could lead to RVSM suspension. Operators are cautioned against flight planning through areas of forecast greater than moderate turbulence.

- Flight plan

The document designated as the Master Document should be carefully checked for date, type aircraft, fuel load and performance requirements. Crosschecks should also be done for routing and forecast groundspeeds. The Master Document should be carefully checked against the filed flight plan to ensure the routing is in agreement with both documents. The enroute time on the Master Document should be compared against the distance to destination for a reasonable groundspeed. The enroute time should also be compared against the total distance for a reasonable fuel load.

- Dual Long Range NAV System (LRNS)

Two operational LRNSs are required for remote oceanic operations. A single FMS receiving inputs from two navigation sensors is not considered to be two LRNSs.

- Long Range Communication Systems (LRCS)
  - ❖ High Frequency (HF) Radio. An HF check should be conducted on the primary and secondary HF radios in areas where dual HF radios are required. If possible, the HF checks should be done on the ground or before entering oceanic airspace. A SELCAL check should also be accomplished at each Oceanic Control Area (OCA) boundary even if datalink equipped.
  - ❖ SATCOM/ SATVOICE. Ensure SATCOM pre-flight complete to comply with FANS/CPDLC requirements.

- Confirm Present Position coordinates

Both pilots should independently verify the Present Position coordinates using either published ramp coordinates or determine position from the airfield diagram. They should not rely solely on the Present Position when the LRNS was shut down from the previous flight. A master source such as an enroute chart should also be used to confirm accuracy of coordinates at the oceanic boundaries.

- Master Document symbols

Operators are encouraged to use consistent symbols on the Master Document. For example, a circled number (②) means the second crewmember has independently verified the coordinates entered or crosschecked by the first crewmember. A checkmark (✓) may indicate that the track and distances have been confirmed. A diagonal line (\ ) may indicate that the crew has confirmed the coordinates of the approaching and next waypoint. An X-symbol (X) may indicate having flown overhead the waypoint.

- LRNS programming
  - ❖ Check currency and software version

    It is important to check the effective date of the database. Crews should note if the database is projected to expire during their trip. Crews are discouraged from flying with expired databases. MELs may allow relief to fly with an expired database but require the crews to manually crosscheck all data. The software version of the database should also be confirmed in case there has been a change.

  - ❖ Independently verify waypoint entries

    It is critical that one crewmember enters waypoint coordinates and that these are independently checked by another crewmember. It should be noted that the pilot should read from the FMS back to the Master Document when verifying data. Reading from the Master Document to the FMS has led to errors based on “seeing what we expect to see” (expectation bias). Both the pilot loading and the pilot verifying the waypoint coordinates should use an independent means, such as checking the course and distance between waypoints against the Master Document, to verify the accuracy of the route loading.

  - ❖ Check expanded coordinates of waypoints

    Most FMSs allow entering abbreviated oceanic coordinates. There have been cases when there was an error in the expanded waypoint coordinate, but crews only checked the abbreviated coordinate. Verifying only the abbreviated coordinate could lead to a lateral error. In a reduced separation environment, it’s imperative that crews check the expanded coordinates of all oceanic waypoints. Flight crews should conduct a magnetic course and distance check between waypoints to further verify waypoint coordinates.

- ❖ Check course and distance

  To minimize oceanic errors, it is important to conduct a magnetic course and distance check from oceanic entry to oceanic exit. Operators should establish a tolerance such as ± 2˚ and ± 2NM. The course and distance check comparing the Master Document against the LRNS are critical in detecting errors that may not have been noticed by simply checking coordinates. A difference of more than 2˚ between waypoints may be due to a difference of the magnetic variation in the database versus the variation used in the Master Document. Any difference outside the ± 2˚ or ± 2NM should be rechecked and verified.

- ❖ Upload winds

  LRNS units generally allow the crew to upload projected winds. This procedure allows more accurate reporting of ETAs.

- Groundspeed check

The groundspeed should be noted before taxiing the aircraft. Crews should expect the groundspeed to read zero (0) knots. This procedure is a good practice to detect an error that may be developing in the LRNS.

TAXI AND PRIOR TO TAKE-OFF

- Groundspeed check

During taxi to the active runway, pilots should check the groundspeed to see if it is reasonable.

- Present Position check

This Present Position check is conducted after leaving the gate. Check for gross difference between this Present Position and the gate coordinates. This check will alert the crew to possible error in the navigation database that can be investigated/corrected prior to take-off.

CLIMB OUT

- Verify ETAs

After climbing above the sterile altitude and time permitting crews should verify ETAs from departure to destination. These should be noted on the Master Document. This is an excellent crosscheck against ETAs computed by the LRNS.

PRIOR TO OCEANIC ENTRY

- Obtain oceanic clearance

Both pilots must obtain the oceanic clearance from the appropriate clearance delivery. (Clearance via voice should be obtained at least 40 minutes prior to oceanic entry and via data link 30 to 90 minutes prior to oceanic entry). Oceanic clearances from Reykjavik centre shall be obtained 15-45 minutes prior to oceanic entry. The pilots should confirm among themselves the assigned routing, flight level and Mach number. Contact the ATS provider for clarification in the event of differences. Read back all waypoint coordinates to the ATS provider, and ensure a correct read-back is acknowledged. Verify the route clearance is properly loaded into the navigation system. It is important that both pilots confirm and ensure the aircraft enters the ocean at the altitude assigned in the oceanic clearance. The flight level in the oceanic clearance may be different than the domestic cleared flight level. If it is different, **crews should request a climb (or descent) from domestic ATC to comply with the oceanic clearance**. Crews should include their requested flight level in their initial oceanic clearance request, and the highest acceptable level which can be attained at the oceanic entry point. Crews should be confident that they are able to maintain requested flight levels based on aircraft performance capabilities.

***NOTE**: Altitudes in oceanic clearances are not "when ready climb" instructions and need to be coordinated with domestic ATC.*

- Navigation Accuracy Check

Before oceanic entry, the accuracy of the LRNS should be checked against a ground-based NAVAID. The results of the accuracy check should be recorded with the time and position. A large difference between the ground-based NAVAID and the LRNS may require immediate corrective action. Operators should establish a navigation accuracy check tolerance based on the type LRNS. It is not advisable for crews to attempt to correct an error by doing an air alignment or by manually updating the LRNS since this has often contributed to a Gross Navigation Error. A latitude/longitude radar fix from ATC can also support a navigation accuracy check in lieu of a NAVAID. Select the most accurate navigation system for auto-coupling as appropriate.

- HF checks

If the crew was unable to accomplish the HF and SELCAL checks on the ground, these checks should be accomplished before oceanic entry. Additional SELCAL checks should be conducted at each control area boundary, regardless whether CPDLC is working normally.

- SATCOM data communication

Flight crews should check that SATCOM data link is operational, if applicable, before oceanic entry if SATCOM data link is planned on being used.

- Log on to CPDLC or ADS-C

Operators approved to use Controller Pilot Data Link Communications (CPDLC) and/or Automatic Dependent Surveillance Contract (ADS-C) should log on to the appropriate FIR 10 to 25 minutes prior to the boundary.

- Verify RNP value.

Pilots should verify that the RNP value set in the FMS is at least as stringent as that required for the route of flight and reflects the RNP capability indicated in the filed ATS flight plan.

- Revised clearance

A re-clearance (that is different from the oceanic route requested with the filed flight plan) is the number one scenario which leads to a Gross Navigation Error. Crews must be particularly cautious when receiving a re-clearance. Both pilots should receive and confirm the new routing and conduct independent crosschecks after the LRNS, Master Document and plotting/orientation chart are updated. Ensure the expanded coordinates for new waypoints are checked and confirmed. It is critical that crews check the magnetic course and distance between the new waypoints as noted in PREFLIGHT under the paragraph "LRNS Programming." Brief all relief pilots on the new clearance prior to them assuming cockpit duties. It is also good practice for relief pilots to independently check the currently effective route clearance against the flight management computer, Master Document and chart.

NOTE: If *the oceanic clearance differs from the flight planned/filed route, the new oceanic clearance must be activated in the FMS/LRNS for the entire length of the oceanic crossing, prior to responding to a "CONFIRM ASSIGNED ROUTE" CPDLC message, which is typically sent shortly after passing the oceanic entry point.*

NOTE*: Track and distance tables are available commercially for every ten degrees of longitude.*

- Altimeter checks

Crews are required to check the two primary altimeters which must be within 200 ft of each other. This check is conducted while at level flight. The stand-by altimeter should also be noted. The altimeter readings should be recorded along with the time.

- Compass heading check (Inertial Navigation Systems)

It is recommended to conduct a compass heading check and record the results when inertial systems are the only means of long range navigation. The check can also aid in determining the most accurate compass if a problem develops over water.

AFTER OCEANIC ENTRY

- Squawk 2000

Normally, thirty minutes after oceanic entry crews should squawk 2000, if applicable. There are some regional differences—for details, see the relevant AIP and/or NAT Doc 007.

- Maintain assigned Mach

Most oceanic clearances include a specific Mach. The increased emphasis on longitudinal separation requires crew vigilance in a separation based on assigned Mach. The requirement is to maintain the true Mach which has been assigned by ATC.

NOTE*: Crews must ensure they fly the assigned fixed Mach (not "COST INDEX," or "LONG RANGE CRUISE" modes, which are variable Mach profiles).*

- VHF radios

After going beyond the range of the assigned VHF frequency, crews should set their radios to air-to-air (123.45) and guard frequency (121.5).

- Strategic Lateral Offset Procedures (SLOP)

The SLOP should be Standard Operating Procedure for all oceanic crossings. This procedure was developed to reduce the risk from highly accurate navigation systems or operational errors involving the ATC clearance. SLOP also replaced the contingency procedure developed for aircraft encountering wake turbulence. Depending upon winds aloft, coordination between aircraft to avoid wake turbulence may be necessary. This procedure, which distributes traffic between flying centerline, 1 NM or 2 NM right of centerline, greatly reduces collision risk in the airspace by virtue of the randomness, which operators ensure by diligent application of SLOP. Operators that have an automatic offset capability should fly up to 2 NM right of the centerline. Aircraft that do not have an automatic offset capability (that can be programmed in the LRNS) should fly the centerline only. Left offsets are **not authorized.**

***NOTE**: Crews should make sure the "TO" waypoint is correct after entering SLOP. With some avionics, when executing an offset near the active "TO" waypoint, the FMS can sequence to the "next + 1" waypoint—skipping a point. Some GNEs have resulted.*

- Hourly altimeter checks

Crews are required to observe the primary and stand-by altimeters each hour. It is recommended that these hourly checks be recorded with the readings and times. This documentation can aid crews in determining the most accurate altimeter if an altimetry problem develops.

- Routine monitoring

Specify which FMS pages, or other appropriate displays of the navigation system are assigned to specific flight crew for monitoring (e.g. cross-track error or time/distance). The non-steering navigation system should be used to display cross-track error and track angle error, if available. If the FMS provides a predicted ETA capability, pilots should take advantage of that function in order to track the accuracy of ETAs and provide reminders for performing the "approaching waypoint" and "10 minute after" procedures. Ensure there is an active CPDLC connection with the proper current data authority.

APPROACHING WAYPOINTS

- Confirm next latitude/longitude

Within a few minutes of crossing an oceanic waypoint crews should crosscheck the coordinates of the next and subsequent ("next + 1") oceanic waypoints. This check should be done by comparing the expanded coordinates against the Master Document based on the currently effective ATC clearance. Verify the course/heading and distance in the FMS to the next waypoint matches the Master Document. Confirm autopilot steering is engaged in the proper mode.

OVERHEAD WAYPOINTS

- Confirm aircraft transitions to next waypoint

When overhead an oceanic waypoint, crews should ensure that the aircraft transitions to the next leg. This is confirmed by noting the magnetic heading and distance to the next waypoint compared against the Master Document (as updated based on the currently effective route clearance).

- Confirm time to next waypoint

Crews must be vigilant in passing an accurate ETA to ATC for the next waypoint. When transmitting waypoint position reports via voice, a change of three (3) minutes or more (for the NAT Region) requires that ATC be notified in a timely manner. Inaccurate position reports adversely affect ATC's ability to safely separate aircraft.

- Position report

After passing over the oceanic waypoint, crews that give a position report to ATC must use the standard format. Crews should also note and record their fuel status at each oceanic waypoint. This is especially important if the cleared route and flight level differ significantly from the filed flight plan.

10-MINUTES AFTER WAYPOINT PASSAGE

- Cross-check navigational performance and course compliance

Plot the latitude/longitude on the chart being used to track flight progress. Confirm the chart. It is advisable to plot the non-steering LRNS. A 10-minute plot can alert the crew to any lateral deviation from their ATC clearance prior to it becoming a Gross Navigation Error. A good crosscheck for the position of the 10-minute plot is that it is approximately 2˚ of longitude past the oceanic waypoint.

In FMS-equipped aircraft the flight crew may, alternatively, use the "nav display" method of navigation cross-checking, as described here: confirm the aircraft symbol is ON the programmed route on the navigation display (at smallest scale). Check system-generated cross-track deviation or similar indication to confirm there is NO deviation from the programmed route of flight (e.g, XTRK is 0.0NM). Using the steering LRNS, verify the "TO" waypoint is consistent with the currently effective route clearance. Investigate/take corrective action to address ANY anomalies or unexpected deviations. Verify the autopilot is in the desired steering mode.

Other methods of navigation cross-checking may be used subject to State aviation authority approval.

MIDWAY BETWEEN WAYPOINTS

- Cross-check winds

It is good practice to crosscheck winds midway between oceanic waypoints by comparing the Master Document, LRNS and upper millibar wind chart. This crosscheck will also aid crews in case there is a need for a contingency procedure such as dead reckoning (DR).

- Confirm ETA

It is recommended that during a wind check the crews also confirm the ETA to the next waypoint. When transmitting waypoint position reports via voice, a change of three (3) minutes or more requires that ATC be notified in a timely manner.

COAST IN

- Compare ground based NAVAID to LRNS

When departing oceanic airspace and acquiring ground based NAVAIDs, crews should note the accuracy of the LRNS by comparing it to those NAVAIDs. Any discrepancy should be noted in the maintenance log.

- Remove Strategic Lateral Offset

Any lateral offset used during the oceanic crossing must be removed prior to exiting oceanic airspace. It is advisable to include this as a checklist item.

- Confirm routing beyond oceanic airspace

Before entering the domestic route structure, crews must confirm their routing to include aircraft speed assignment.

NOTE*: Crews experiencing loss of communications leaving oceanic airspace should follow State guidance as published in AIPs.*

DESTINATION/BLOCK IN

- Navigation accuracy check

When arriving at the destination gate, crews should note any drift or circular error in the LRNS. A GPS Primary Means system normally should not exceed 0.27 NM for the flight. Some inertial systems may drift as much as 2 NM per hour. Because the present generation of LRNSs is highly accurate, operators should establish a drift tolerance which if exceeded would require a write-up in the Maintenance Log. RNP requirements demand that drift be closely monitored.

- RVSM write-ups

Problems noted in the altimetry system, altitude alert or altitude hold must be noted in the maintenance log.

- END -