An Introduction to Spanish Sailors

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I. Measurements
   a. Time
      i. Sand glass –
         1. "Ampolleta"
         2. Had enough sand to measure 30 minutes before being turned
         3. Bells – likely rung at the flip of the sand glass
      ii. Chants
      iii. Watches of the Day/Night –
         1. Consisted of 4 hours or 8 turns of the sand glass
         2. If the bell was rung at each turn, we obtain the count of 8 bells per watch
      iv. Catholic Hours
         1. Prime
         2. Terce
         3. Sext
         4. Nones
         5. Vespers
         6. Compline
      v. Celestial reckoning
         1. Watched path of sun or stars relative to the bow, mast, stern etc.
         2. Celestial bodies moved 15 degrees per hour and move a total of 270 degrees from rise to set
            a. A star rising at 45 degrees will set at 315 degrees
         3. "Regiment of the North"
            a. Path of celestial bodies relative to the human form
            b. Pole star is at the head
            c. Guardian stars of the Little Dipper move around the form
               i. Kochab & Pherhad
            d. Imaginary lines through the body at 45 degree angles which represents 3 hours each
      vi. Calendar
         1. Same days / dates
         2. Julian calendar
            a. 365.25 days long accumulating an 11 minute 14 second overage each year
            b. By Columbus's time this had added up to 9 days difference. His October 12 discovery should therefore be October 21!
            c. Gregorian calendar accepted in 1582 in the Catholic countries fixed this error

b. Speed
    i. Calculation
        1. Drop a piece of wood at the bow
        2. Chant/recitation calculates time to reach the stern
    ii. Average 100 miles per day

c. Distance
    i. Columbus did not have the correct circumference of the Earth
        1. Believed a degree of longitude was about 56.66 miles giving a circumference of 20,400 miles
        2. Actual degree is 69 miles
    ii. Measures
        1. “palmo” or span = 8.22 inches
        2. “paso” or pace = 4.75 feet
            a. Varied from area to area
        3. “remo de barca” or boat oar = 8 feet
        4. “tiro de lombardo" or lombard shot = 900 feet
        5. “tiro de ballesta” or crossbow shot = 1000 feet

d. Weights / Liquids
    i. “quintal” = 101.425 lbs
    ii. “arroba” = 25.356 lbs
    iii. “tonel” or “ton” = 1,267.81 lbs = 1.66 casks containing 45.15 arrobas each
        1. “bota” or “pipa” (wine casks) contain 27.5 arrobas of wine which is about 83.45 US gallons
    iv. “tonel macho” = 2 casks

e. Tools
    i. Compass Wind Rose
        1. Had 30 points
    ii. Cross Staff
        1. Fixed perpendicular bars
        2. Movable bar to measure angle of sun relative to land
    iii. Quadrant
        1. Forerunner to sextant
        2. Had five scales to read: Sine, Cosine, Tangent, Cotangent, Equal Degree
        3. Required plumb bob line which was difficult to use in choppy seas
    iv. Astrolabe
    v. Portolan Chart
        1. Loxodromes or Rhumbs which correspond to compass rose points
        2. Spanish are always too far north when drawing charts
        3. Northern European more regimented/exacting
            a. Flemish sailors published 2 sets of charts; 1 for themselves which was more accurate and 1 for the Mediterranean sailors which was more lax

II. Lifestyle
- a. Clothing
  - i. Loose fitting as opposed to Spanish fashion of the time
  - ii. Drawings by Christoph Weiditz (German) from his visit portray sailors
  - iii. Typical outfit
    1. Blouse with hood
    2. "Sayuelo" or short woolen jacket/gown with skirts
    3. "Zaragüelles" or wide pants that fell to the knees
    4. "Capote del mar" or sea cape
    5. "Bonete" or cap; usually red

- b. Food Stuffs
  - i. Rations
    1. Daily ration
       - a. 1.5 pounds biscuit
       - b. 1 liter water
       - c. 1 liter wine
    2. M,W,F,Sa ration
       - a. ½ peck of horse beans & chickpeas
         - i. Shared among 12 sailors
       - b. 1 pound salted fish
         - i. Shared among 3 sailors
    3. Tu ration
       - a. 1 pound oil & rice
         - i. Shared among 10 sailors
       - b. ½ pound salt pork
    4. Su,Th ration
       - a. 1 pound salted meat
       - b. 2 oz. cheese
    5. Each Month
       - a. 1 liter of oil
       - b. 1.5 liter vinegar
  - ii. Fish was probably dogfish, red snapper or sardines
  - iii. Stews of the mixtures and the meats were one way to serve meals
    1. Spanish ships did not have a designated cook
    2. Cooking was considered menial labor
  - iv. Caloric content was probably between 3500 and 4200 per day
    1. Protein was adequate
    2. Deficient in fruits and veggies
    3. VERY deficient in water
       - a. Need about 10 liters per day for proper hydration
       - b. Often didn't drink the water ration due to stagnation in the wood casks it was carried in across the sea
  - v. Rations had to be split between the three meals of the day
  - vi. Rations supplemented by fishing by sailors!

vii. Rations might be restricted during periods of rough seas **or** periods of calm

III. Hierarchy

a. Pages
   i. As young as 8-10 years to as old as 15-18 years
   ii. Often runaways or orphans
   iii. "Protected" served masters among the ships officers who were often friends or relatives of the page
   iv. "Unprotected" were subject to the orders of any member of the crew
   v. Jobs
      1. Galley – cooking was "beneath" the older sailors
      2. Scrub/Clean the ship
      3. Religious observances
         a. Turning of the Sand Clock & recitation of prayers
   vi. Due to youth, didn't receive as much punishment

b. Apprentices
   i. Usually between 17-20 years up to late 20s
   ii. Agile and Flexible due to youth
   iii. Jobs
      1. Loading/Unloading cargo
      2. Lookouts in the mast
      3. Furling the sails in stormy weather
   iv. Didn't have the protection of youth, so received brunt of punishments

c. Sailor
   i. Mean age was 28-29; 35-40 years was considered old for the job
   ii. Fully qualified at sea
   iii. Certified by the master, pilot, boatswain, and notary
   iv. Jobs (most dexterous)
      1. Manned the helm
      2. Watched the sounding line
      3. Repaired riggings
      4. Tied complex knots

d. Gunners
   i. "Lombarderos"
      1. Manned the artillery
      2. Knew how to make gunpowder
      3. Knew how to load and aim the cannons
   ii. "Condestable" or sergeant
      1. In charge of the artillery

2. Often foreigners

e. Repair Officers
    i. Carpenter
    ii. Caulker
    iii. Diver

f. Other Officers
    i. Scrivener or scribe
        1. Registered the cargo
        2. Certified the cargo
    ii. Cooper
    iii. Barber-surgeon (usually only on larger ships)
    iv. Chaplain (usually only on larger ships)
    v. NO COOK

g. Command Officers "Comanderos"
    i. "Despensero" or Steward
        1. Symbol is the keys
        2. Hands out the rations
        3. Not always the most honest; skimmed rations from sailors
    ii. Boatswain
        1. Symbol is the whistle
        2. Jobs
            a. Discipline of crew
            b. Storing cargo
            c. Courier of pilot's orders
                i. Operates from the poop deck to be close to pilot
    iii. Boatswain's Mate "Guardian"
        1. Operates from the prow
        2. Responsible for auxiliary craft
        3. Assists in the discipline of the crew
    iv. Pilot
        1. More highly educated to be able to use the tools of the trade
        2. Jobs are all things nautical
            a. Makes charts
            b. Calculates angles of sun and pole star
            c. Reads declination tables
            d. Issues all orders regarding nautical matters
    v. Master
        1. Economic authority of the ship
            a. Secures cargo & passengers
            b. Pays taxes and tributes

vi. Captain
    1. THE military authority on ship
    2. Spanish ships may or may not have them; may be chosen on the spot if trouble arises
    3. If present, has little authority during peaceful voyages
    4. If present in times of trouble, has the ultimate authority to protect the ship and coordinate activities for defense

vii. "Ship Lords" or Owners
    1. Often went to sea with ship
    2. Might serve as ship's Captain

Books Used in Making this Outline:

Columbus, Christopher. The Log of Christopher Columbus. Robert H. Fuson, Trans. International Marine Publishing, Camden, ME. 1992. ISBN: 0-87742-316-4

Martin, Colin & Geoffrey Parker. The Spanish Armada. Penguin Books, London, England. 1989.

Pérez-Mallaína, Pablo E. Spain's Men of the Sea. Carla Rahn Phillips, Trans. Johns Hopkins University Press, Baltimore, MD. 1998. ISBN: 0-8018-5746-5