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COMTRAWINGSIXINST 6410.1A
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COMMANDER, TRAINING AIR WING SIX INSTRUCTION 6410.1A

From: Commander, Training Air Wing SIX

Subj: AIRSICKNESS MANAGEMENT PROGRAM (AMP)

Ref: (a) CNATRAINST 6410.2A

Encl: (1) Training Air Wing SIX Airsickness Handout
(2) Airsickness Management Scale

1. Purpose. To establish policy, procedures and training for all Training Air Wing SIX (TW-6) Student Naval Flight Officers (SNFOs) who experience airsickness, in accordance with reference (a).

2. Cancellation. COMTRAWINGSIXINST 6410.1

3. Background. The general guidance contained in this instruction supplements and further delineates the detailed guidance provided by reference (a) to accommodate the accelerated training schedule and limited flights by SNFOs prior to initial student selection and possible assignment to fleet aircraft after completion of Naval Flight Officer Training System (NFOTS) syllabus.

4. Airsickness Management Procedures for SNFO Training

a. PHASE 0: AIRSICKNESS AWARENESS BRIEF. SNFOs, prior to initial T-6A aerial training shall receive an airsickness awareness brief from the Flight Surgeon or the Aeromedical Safety Officer to include the cause, prevention, management, safety implications, and potential training impact of airsickness on flight training. Enclosure (1) shall be utilized on an as needed basis to provide individual educational assistance and expand upon the "Airsickness Handout" in enclosure (6) of reference (a).

b. PHASE I: FLIGHT SURGEON EVALUATION

(1) A Flight Surgeon (FS) evaluation is required for each flight with occurrence of active airsickness or passive airsickness symptoms causing degradation of flight performance, after the completion of C4101. Determination of performance degradation in regard to passive airsickness symptoms should be at the discretion of the instructor pilot (IP) with consultation

with the FS as needed. Students who experience active or passive symptoms severe enough to incomplete the event due to airsickness, shall see the FS prior to being scheduled for or executing a subsequent syllabus event. This evaluation shall be documented in the student's medical record. If the IP checks the airsickness box or discusses active or passive airsickness symptoms on a SNFO flight grade sheet, the IP shall complete the instructor section of the "Airsickness Notification Form" in enclosure (1) of reference (a) and provide to the student. The student shall report to the FS with the above paperwork and complete the physical exam per enclosure (3) of reference (a).

(2) The purpose of the FS evaluation is to determine if the student's symptoms are due to other physiologic causes. The FS should ascertain if the airsickness preventative measures presented in Phase 0 were followed. Additionally, the FS should assess the member's Aeronautical Adaptability (AA), motivation to fly, and special circumstances such as anxiety, stress, and other predisposing factors. Counseling or medical treatment may be indicated at this time.

(3) Referral of the student by the FS or Aeromedical Safety Officer (AMSO) for behavioral health counseling and/or training should be considered at any point during phases I through III. Referral consideration should be based on severity of the airsickness problem and impact on quality of training and safety of flight. Other concerns include the individual needs and desires of the student and the availability of local resources to provide the training.

c. PHASE II: MEDICATION. Medications are authorized per reference (a) and should be considered after a student's second documented episode of airsickness in the contact phase. Due to time constraints with the accelerated syllabus, however, medications should not be used prior to C4104 and shall not be used after completion of contact flights.

d. PHASE III: AIRCREW ROTATIONAL TRAINING

(1) Students who demonstrate persistent or recurrent airsickness symptoms shall be referred to the FS for evaluation and considered for Aircrew Rotational Training (ART). This is an up to ten working day program intended to provide physiologic adaptation utilizing the Barany Chair and airsickness management scale as outlined in enclosure (2). ART should not exceed ten days without a demonstrated need and shall not exceed 15 days without prior CO approval. Following the completion of ART, students should be offered the opportunity for remediation spin training on an "as needed" or "desired" basis, such as following extended periods of time out of the cockpit or prior to any dynamic flights. If a student fails to improve or worsens using the ART chair, an Airsickness Review Board (ARB) shall be convened to determine retention or attrition.

(2) In order to facilitate the maximum opportunity for adaptation without negatively impacting time to train, the following set of guidelines should be applied to ART:

(a) Students with three episodes of documented airsickness in the contact phase should be referred to the AMSO for ART after completion of Instrument Ground School (IGS). Students should complete their ART during Instrument Sims. Per reference (a), students are able to undergo adaptation with ART on the same day as a scheduled simulator event, provided the simulator event is scheduled earlier in the day than ART.

(b) Students with any documented airsickness while on airsickness medications shall be placed on administrative hold immediately to undergo ART.

(c) If a student triggers an Airsickness Review Board (ARB) and has not already completed ART, he/she should have an opportunity to do so prior to the board convening. This will allow the board to have more information on the student's potential for adaptation based on the AMSO's evaluation during ART.

e. PHASE IV: ADAPTATION FLIGHTS

(1) Syllabus adaptation flights should be utilized by SNFOs who have recurrent airsickness symptoms. Priority should be given to adaptation within the syllabus. Flights should consist of daily scheduling of syllabus events on consecutive training days with a designated airsickness qualified Instructor Pilot (IP). Ideally, five consecutive flights should be completed, but there may be as few as two adaptation flights if an aviator shows a pattern of adaptation. In the event the SNFO is scheduled for multiple syllabus events per day, after one incident of active airsickness or passive symptoms as defined above per IP discretion, the SNFO should not commence the second syllabus event in the same day. This does not preclude a 'ferry flight' to a planned destination.

(2) Non-graded, non-syllabus adaptation flights should be used only when the SNFO fails to adapt using ART, or per CO discretion. Non-syllabus flights may be used to help evaluate the possibility of adaptation in the T-6A prior to consideration for attrition due to airsickness. The use of adaptation flights should not adversely diminish training resources or degrade the unit's overall training mission. Adaptation flights shall be documented on the Airsickness Tracking Form.

(3) A "favorable response" to adaptation flights is considered to be a resolution of active airsickness and/or a significant subjective or objective decrease in the frequency and severity of passive airsickness symptoms such that the student is able to successfully perform all required duties in flight. Students who do not demonstrate a favorable response to adaptation flights or in whom airsickness symptoms recur after adaptation flights have been conducted shall be referred to ARB for determination of retention.

6. Airsickness Review Board (ARB). After an SNFO's sixth episode of airsickness in Primary 1 or third episode post I4101 an ARB shall be convened. Alternatively, an ARB may be convened at any time by the Commanding Officer whenever a student experiences persistent, severe, or recurrent airsickness. The conduct, composition, and potential outcomes of the board are described in enclosure (5) of reference (a). If the student is returned to training and again experiences airsickness, the board shall be reconvened not later than the third subsequent episode of airsickness to consider retention or attrition. Returning a student to training after a second ARB requires Wing Commander concurrence.

7. Advanced Flight Students who Demonstrate Airsickness. Students in advanced phase of flight training (after completion of Primary I NFOTS syllabus) shall be referred to the flight surgeon after each episode of airsickness to rule out underlying medical etiologies of airsickness or to identify and correct predisposing causes. This FS evaluation shall be documented in the student's health record. Symptoms in some cases may be attributable to the student's transition to a higher performance aircraft and in this case a reasonable period of adaptation is warranted. Utilization of adaptation modalities in Phases III and IV of the AMP should be considered for management of airsickness during this stage of training. After the third consecutive episode or fifth episode in any one phase of advanced flight training an ARB shall be convened to assess the student's potential for successful completion of the program as outlined in enclosure (5) of reference (a).

8. Disqualification for Airsickness. SNFOs who cannot overcome airsickness problems shall be processed for attrition according to parent service or country directives. USN and USMC SNFOs who experience intractable airsickness are not physically qualified/waiver not recommended for aviation duty. In no case will flight students be granted an airsickness medical waiver.

9. Instructor Pilot (IP) training for Airsickness

a. PHASE 0: AS AWARENESS BRIEF. IPs undergoing training in the Flight Instructor Training Course (FITC) shall receive an AS brief that includes types, causes, and prevention of AS, in-flight management and preferred flight maneuver execution for AS, proper documentation procedures for AS in TIMS, and use of the 'Airsickness Notification Form'.

b. PHASE I: DESIGNATED AIRSICKNESS TRAINED INSTRUCTOR PILOTS. IPs who have been designated by their CO shall receive further training in the AMP, performance of flight maneuvers to minimize airsickness symptoms, and airsickness prevention. These IPs should primarily be scheduled as the Instructor Pilots for airsick SNFOs upon return to training from adaptation. They should fly between two to five syllabus events with the SNFO, utilizing

and reinforcing adaptation techniques learned during ART training while completing scheduled syllabus events.

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AIRSICKNESS

1. Airsickness is the result of conflicting sensory input between the visual and vestibular systems. Common signs and symptoms usually progress from stomach awareness, lethargy, apathy, sweating, salivation, drowsiness, and headache to vomiting. Airsickness is a common problem encountered in aviation training that historically has affected 60% of student pilots (~80% in SNFOs) to some degree. Airsickness will usually abate with continued and consistent flying.

2. Prevention and treatment of airsickness

a. **Pre-flight Prevention**

(1) Diet and Hydration. Maintaining a balanced diet is essential for overall wellness. **Eat a good meal** with adequate carbohydrates **1-2 hours before getting in the plane** is advisable. Until you determine what works (or does not work) for you, avoid: greasy, spicy, fatty foods, acidic foods (oranges, tomatoes or lemons), and dairy products. Avoiding dairy products means not only milk on your cereal, but also no cheese or mayonnaise on your sandwich. Maintain proper hydration with juice, water or a sports drink. **Take and consume ice-cold water on training flights.** If your urine is clear, you are likely well hydrated.

(a) **Dairy Products: Do NOT use milk** on your cereal. Milk and other dairy products are high in fat which take longer to digest. Milk has the tendency to exacerbate "stomach awareness" symptoms potentially aggravating airsickness arousal level. Also, stay away from any food or drink that has a high acidic content. Additional acid is not needed in your stomach. The primary purpose of this particular diet, one to two hours prior to flight, is to reduce/minimize the amount of stomach acid. Use your better judgment when adding new/additional foods to your "*before flight*" menu.

(b) **Sources of Complex Carbohydrates.** This is a *suggested* list; there are many other foods high in complex carbohydrates.

1. Grits, oat cereals with no milk, whole grain cereals, pancakes, waffles, French toast, muffins, bagels.

2. Pasta, without sauces (tomato sauce is high in citric acid).

3. Crackers, popcorn, pretzels.

4. All vegetables, especially peas, beans, lentils, corn, lima beans, potatoes, sweet potatoes, and squash; unless they cause **excess gas.**

5. Juices, non-acidic only (like apple). No lemonade, orange or tomato juices.

6. Any sandwich combination is good; however, avoid mayonnaise, spicy pepper, spicy mustard, or cheese.

(2) Rest. Eight hours of uninterrupted sleep is recommended the night prior to flying.

(3) Ginger. Ginger root tablets can create a gastrointestinal relaxation effect that helps prevent airsickness and have no adverse medical side effects. Also, they have been approved by the flight surgeons. Recommended dosage is one 500 mg tablet with breakfast, and one tablet prior to walking to the aircraft. Since ginger taken alone can be harsh, tablets should always be taken with food.

(4) Peppermint. Peppermint also creates a gastrointestinal relaxation effect. Eating peppermint candy before flight or chewing peppermint gum during flight can help settle the stomach.

(5) Vitamin B6. Vitamin B6, like ginger, can help relieve nausea with no adverse side effects and is approved for use. Recommended dosage is 75-100mg once a day taken with food.

(6) Anxiety**.** Proper preflight preparation with studying and chair flying will help decrease anxiety. The Fleet and Family Support Center provides stress management classes that have proven successful in treating anxiety associated with airsickness.

b. **In-Flight Management**

(1) The complex instrument package of the T-6 draws attention to the flight instruments during flight. To become a better NFO and avoid the vestibular-ocular mismatch that causes airsickness, students should employ an outside scan by keeping your eyes on the horizon. **Keeping the head steady when possible while scanning only with the eyes** can be a helpful technique to minimize coriolis and nausea. Make smooth control and head movements, since abrupt movements can incite sensory mismatch. The following maneuvers should be discussed with the IP and planned to be conducted in a manner that can be performed to provide maximum recovery time.

(a) Power-on Stall. With nothing above the glareshield to stimulate vision, a natural tendency is to look solely at cockpit instruments. To avoid airsickness, students should momentarily look outside with eyes only to verify attitude while slowing through 100 knots.

(b) G-Awareness Maneuver. The sensitivity of the instruments during high performance maneuvers can cause students to chase the proper attitude. The resulting erratic up and down nose movements above and below the horizon not only causes poor performance but airsickness, as well. Find a point on the aircraft (the point where the upper exhaust stack meets the airframe) to drag across the horizon.

(c) ELP series Stalls. Initial recovery will have the nose of the aircraft searching for a stable attitude. Until the aircraft entirely stabilizes, aviators should use the prop arc on the horizon as a visual reference. Only after the prop arc is stable on the horizon should the 8-10 degrees nose down be verified on the attitude indicator.

(d) Spin. Unlike all the other maneuvers, keep an inside scan as much as possible while conducting spin training. Looking outside too quickly during spin recovery will induce airsickness-wait about two seconds to look outside. The abnormal, abrupt motion of a spin can render the stomach queasy. If altitude and airspeed permits, avoid excessive G-loading during recovery pull-out.

(e) Unusual Attitudes. Negative G-loading unsettles the stomach. Proper FTI procedures for nose high recovery are to maintain positive G's on the aircraft, which is particularly important to avoid airsickness.

(f) Landing Pattern. Coupled with additional turbulence, the dynamic nature of the landing pattern causes a lot of head and aircraft movements that incite airsickness. Airsickness recovery is difficult because flying wings level is not possible. For instance, when the aircraft is #1 upwind it has to turn and at the abeam position it must also turn. If time and fuel permit, depart the pattern to recover and reenter when airsickness subsides.

(2) When airsickness is recognized, SNFOs should be proactive and not reactive with trying to correct the problem; don't just endure it.

(3) Cockpit management and maintaining controls of the aircraft as much as possible (during contact stage) are imperative to avoiding airsickness. Storing gear where it is easily accessible without excessive stick movement and/or passing the controls while minimizing head movement is essential. Put the barf bag in the left G-suit pocket or under the knee board. When the IP demonstrates a maneuver, lightly ride the controls so as to not be surprised by unanticipated aircraft movements.

(4) If you start to experience airsickness, inform your instructor the degree of airsickness using the airsickness scale (1= feeling normal, 10= vomiting). When experiencing airsickness, SNFOs should tell instructors their levels after each ops-check or checklist, as their symptoms worsen, or prior to becoming actively airsick (10). **Do not allow yourself to become actively sick or let the IP make you actively vomit if at all possible.**

(5) Reduce airspeed and fly aircraft wings level. Ask the IP to do this if you do not have controls. Slowing down saves fuel, reduce turbulence, and permit more straight and level flight needed to recover. Resuming maneuvers too quickly increases the chance of a relapse.

(6) Diaphragmatic Breathing. Perform deep diaphragmatic breathing when airsickness symptoms begin. Close your mouth and inhale slowly through your nose so that your abdomen

expands. This helps to prevent air swallowing and hyperventilation. Slowly exhale through your mouth. Continue at a slow, comfortable pace. Resume normal breathing once your airsickness symptoms have dissipated.

(7) Water bottle. Most right-handed people will instinctively use their right hand to hydrate- forcing them to fly rough left-handed flight. Take a sip of iced water to break up the thick spit that develops during airsickness. Water fountain water will warm to a temperature that will provide little relief when it is needed. The water bottle should be small enough to be stored and accessed easily without having to move your head significantly, and have a top that permits one-hand operation, so that normal control can be maintained. The student should also be proficient connecting the left bayonet fitting of the oxygen mask.

(8) Cool down. While continuing to fly with your right hand, undo the left sleeve and put your hand above the air conditioning vent on the glare shield, so that cool air flows up the sleeve. For added relief pour some water on the back of the neck- this distracts the affected and also cools them down. Caution: an extreme amount of improperly poured water could cause inadvertent LPU activation.

c. **Post-Flight Management**

(1) A visit to the flight surgeon is required after the second episode of airsickness and on any occasion thereafter.

(2) Do not fly the second flight of an out and in if you are actively airsick on the first flight!

(3) Call the FS or AMSO if you require additional assistance pertaining to airsickness.

EXAMPLE OF DAILY ROUTINE

Breakfast

- No dairy products
- Bagel with peanut butter only or including honey/grape or apple jelly
- One Ginger tablet (500mg)
- Drink water, apple juice, or a sports drink (no orange, lemonade or tomato juices)

Flight Brief: know briefing info thoroughly (helps reduce stress)

- Following brief, eat a peanut butter sandwich
- One Ginger tablet (500mg)
- Drink water or sports beverage…no more than 20 oz
- While walking to paraloft, eat a peppermint candy

In-flight

- Minimize head movements/lead with eyes - helps reduce dizziness/nausea
- Exercise deep breathing technique if nauseous
- Ride the controls when IP is demonstrating– helps provide better SA

Lunch

- Refrain from eating greasy, spicy or fried foods
- No dairy products

Dinner/Supper

- Avoid greasy, fried, and spicy foods like Italian red sauce for pastas, cheese, pepperoni pizza
- Grilled chicken or fish, salads
- One Ginger tablet (250mg)
- Drink water, tea, or sports beverage
- No dairy products
- Friday and Saturday nights: eat and drink whatever you want.
- Sunday, return to the above disciplined schedule

RECOMMENDATION: Remain on the above regime until you have totally overcome airsickness.

BASIC AIRSICKNESS MANAGEMENT SCALE

				
1 NO SYMPTOMS. FEEL NORMAL.	**2** SLIGHT AIRSICKNESS, SIMILAR TO "TEST ANXIETY."	**3** LOW LEVEL AROUSAL/MILD AIRSICKNESS. MILD NAUSEA.	**4** FEELING NAUSEATED. ABLE TO MAINTAIN CONTROL OF AIRCRAFT & COMPLETE ALL MANEUVERS.	**5** NEED TO FLY STRAIGHT & LEVEL. NAUSEA MORE PRONOUNCED BUT ABLE TO MAINTAIN CONTROL.
				
6 MEDIUM AROUSAL/ AIRSICKNESS. COULD DEVIATE FROM PLANNED FLIGHT. NAUSEA INCREASED.	**7** DEVIATED FROM PLANNED FLIGHT. NAUSEA INCREASED.	**8** INDICATES NEED TO TRANSFER CONTROLS TO INSTRUCTOR PILOT. UNABLE TO MAINTAIN CONTROL & COMPLETE ALL MANEUVERS.	**9** HIGH LEVEL AROUSAL/ AIRSICKNESS. COMPLETE INCAPACITATION. CAN NO LONGER FUNCTION AT AREA OF RESPONSIBILITY.	**10** ACTIVELY SICK/EMESIS.