



THE TALON



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OPENING REMARKS

The TALON has a long tradition at HELTRARON EIGHTEEN clarifying procedures and accentuating those training areas needing emphasis. Several quarters have passed since the last issue's publication and a lot has changed. This is my first TALON as the Standardization Officer and I would like to welcome the following personnel to the department: LT Cosky – CAT II, LT Schallenberger – CAT IV, LT Kirkpatrick – CAT III, and LT Goettsche – Training Officer.

This issue of the TALON focuses on typical weather patterns and effects on training. Much like the Pointers Sisters' song of Yesteryear, "The Heat Is On"! Hydration is critical and we are lucky to have a resident expert, LCDR Leibig, M.D., introduce the physiological effects of heat on flight re-

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lated performance. Do not underestimate the impact heat will have on your judgment and that of your students. The best way to combat the effects of heat stress is hydration, nutrition, and exercise. Following Doc's introduction, each CAT discusses weather considerations as they pertain to their respective training areas.

Maj Thomas "Chumley" Addison

Physiological Effects of Heat

The body undergoes certain physiological changes to counteract heat stress. To get heat from the inner body core to the surface where it can be lost to the surroundings, blood flow to the skin increases significantly. Blood flow to the other organs is reduced, and the heart rate is increased so that the body can maintain adequate blood pressure. As heat builds up, receptors in the skin, brain, and neuromuscular system are stimulated to increase sweat production. Normal heavy sweating produces around one pint to one quart of sweat per hour and heat-stress conditions at times can result in up to 3 to 4 quarts produced per hour. If sweat loss is not replaced, rapid dehydration occurs, rate of sweat production drops, and body temperature increases, causing further heat injury.

Individuals vary in their response to heat stress. Some serious reactions are heat cramps, heat exhaustion, and heatstroke. Factors that influence

the physiological responses to heat stress include the amount of work that individuals perform and their physical condition as well as their ability to adapt to the environment. Excessive alcohol ingestion, lack of sleep, obesity, or previous heatstroke can diminish tolerance to heat stress and a previous heat stroke will increase probability of future heat strokes.

Heat stress not only causes general physiological changes but also results in performance impairment. Even a slight increase in body core temperature impairs an individual's ability to perform complex tasks such as those required to fly an aircraft safely. A body temperature of 101 degrees Fahrenheit roughly doubles an aviator's error rate. Generally, increases in body temperature negatively affect an aviator by increasing error rates, causing less reliable short-term memory, and the slowing of perceptual and motor skills resulting in a decreased capacity to perform aviation tasks.

LCDR Jonathan "Doc." Leibig

CAT I - Density Altitude Refresher

The time of year is upon us when the Southeast experiences high temperatures and intense isolated thunderstorms that seem to appear out of nowhere. As instructors, we need to keep the students informed and share our thought processes. The students should continue to communicate any ORM concerns they have regarding weather while our responsibility is to instruct them on decision making with respect to launching and mission completion. If weather is questionable, there is no harm in canceling and getting the "X" another day.

As fleet aviators, we understand how density altitude (DA) and weight effects aircraft performance. However, we sometimes overestimate students' ability to recognize these nuances. We should anticipate the inability of a student to pick up cues such as increased sink rate and high closure rate. Particularly, during power-off maneuvers, be prepared to assume the controls or wave off early. The Rotary Wing Operating Procedures (RWOP) clearly states all numbers associated with practice emergency procedures. Take an extra moment to review the following excerpt from RWOP Section 3.5 and *take this knowledge to the brief*.

3.5 AUTOROTATIONS AND SIMULATED EMERGENCIES

1. Practice full autorotations shall not be conducted unless the fuel load is below 45 gallons.
2. The IP shall perform the first practice autorotation of every syllabus event.
3. Simulated engine failures at altitude shall not be conducted at gross weights above 2900 lbs when the DA exceeds 1800 ft.
4. Practice autorotations shall not be conducted when winds are less than 5 knots and the density altitude exceeds 2500 feet.
5. Cut guns and Power Recovery Autorotations shall not be conducted when gross weight exceeds 2900 lbs.

Remember Weather Vision provides maximum DA for the day but you must consult a current METAR or NAS South Whiting Field ATIS to receive current DA. If a question arises, DA can also be calculated with the pocket checklist. Always keep your head on a swivel, and if current DA and wind conditions preclude the conduct of practice autorotations, don't hesitate to share that information with other aircraft.

Students may not understand how these numbers effect the conduct of flight so it is our responsibility to emphasize DA relationships and ensure our students' knowledge is as complete as possible.

Fly Safe,

LT Todd "Surley Todd" Urkowitz

CAT II - Convective SIGMETs

Often times, the buildup of towering cumulonimbus clouds results in the issuance of Convective SIGMETs (WST). As instructors, we must understand the exact circumstances surrounding the issue of a WST and communicate them to our students:

Reasons for WST Issuance and Associated Hazards:

Per AIM, 7-1-6 (d)

(a) Severe thunderstorm due to:

- (1) Surface winds greater than or equal to 50 knots.
- (2) Hail at the surface greater than or equal to $\frac{3}{4}$ inches in diameter.
- (3) Tornadoes.

(b) Embedded thunderstorms.

(c) A line of thunderstorms.

(d) Thunderstorms producing precipitation greater than or equal to heavy precipitation affecting 40 percent or more of an area at least 3,000 square miles.

Any convective SIGMET implies severe or greater turbulence, severe icing, and low-level wind shear. A convective SIGMET may be issued for any convective situation that the forecaster feels is hazardous to all categories of aircraft.

WST Timeline:

Convective SIGMET bulletins are issued hourly at H+55. Special bulletins are issued at any time as required and updated at H+55. A convective SIGMET for a continuing phenomenon will be reissued every

hour at H+55 with a new number. The forecast is valid for up to 2 hours.

Operating within a WST:

Per the RWOP Chapter 2.8 (2), TH-57 aircraft may launch, continue to operate, and enter WST boundaries within areas that a qualified forecaster has designated as “not progressing as forecast” (i.e. NFWB or NASWF weather office depiction of the current WST and annotated with “hatched out areas are not progressing as forecast”) *but shall remain VMC.*

During night time operations, TH-57 aircraft shall not be operated within WST boundaries except within areas designated as “not progressing as forecast” *but shall remain VMC.*

WST Operations when not “Hatched Out”:

TH-57 aircraft may also operate within any areas of a WST with approval from the squadron Commanding Officer, Executive Officer, or Operations Officer, *but shall remain VMC.*

Operations in WSTs issued After Takeoff:

And finally, the RWOP states that “in the event that a WST forms around TH-57 aircraft that were already operating prior to the WST, crews shall make a reasonable attempt to satisfy the conditions outlined above. Without positive confirmation that those conditions are satisfied, **crews are expected to cease training and exercise sound, conservative judgment** in their decision to divert to an OLF, divert to another suitable airport, or return to South Whiting.”

LT Todd Cosky

CAT III - Weather Considerations for FORM and SAR Flights

The RWOP clearly defines minimum weather requirements for Formation and SAR flights. The RWOP is very generous with minimum weather requirements which is good but, this freedom also provides more than enough rope to hang ourselves. Remember, weather considerations should go beyond the question of, “Are we legal?” Ultimately, the IP/Section Leader retains the decision to launch. However, prior to making that call, consider the following:

Crew Comfort Level:

An ORM brief is required prior to every brief for flight events. Any time the weather is questionable, consider how much focus the IP and student will place on visibility and ceiling related challenges. Often times, a SNA will be reluctant to speak up regarding weather concerns and will follow the IP’s lead. If weather has been an issue for a few days, there may also be perceived pressure to complete a training event or complacency with respect to the dangers of degraded weather conditions.

Ability to Meet Objectives:

The prevailing weather conditions during the summer months are very challenging. Poor weath-

er conditions may not result in cancellation of the flight schedule, however it does test our operational flexibility. As we push to complete events in challenging conditions, consider the impact to SNA training objectives. The formation syllabus is short (only four flights) and launching knowing you may be unable to complete all training objectives will shortchange the student. We must continue to ask ourselves “Did we complete the student per MPTS” and “Has the student received adequate training and exposure to the maneuvers.”

Weather Impact to Safety of Flight:

Flight in reduced visibility is challenging to the SNA. In addition, the Eastern Formation Area can become very small when multiple sections are operating. With a focus on weather and collision avoidance, the flight can easily deviate from a quality training event.

On another note, I am passing the CAT III torch to LT Kirkpatrick and want to extend my sincere gratitude for the opportunity to work with everyone.

Capt. Andre “Tums” Karpowich

CAT IV - Getting Ahead!

As SNAs near the end of the syllabus, I am often asked what advice I can provide to give them a head start on the NVG Stage. Most SNAs are working one or maybe two events ahead through-out flight school so “getting ahead” can prove to be a difficult task.

Procedurally, NVG FAM flights and Santa Rosa operations have not changed. However, the challenge occurs when learning to utilize the new NVG scan along with normal instrument and unaided scans at night. A thorough review of course rules at Santa Rosa and its NVD Operations will prove very helpful.

As for the Low Level Navigation Routes, “getting ahead” starts in the brief. The Low Level Navigation briefing card is still used with added emphasis placed on the “N” in FALCON to cover NAVAID and NVG considerations.

Possible NVG considerations include:

i. Moon position effects on course and checkpoints

- ii. Describe cultural lighting and its effects
- iii. Any impact shadows have on navigation or safety of flight
- iv. Terrain contrast/albedo along route legs or at checkpoints
- v. Effects of weather on NVG performance

Preflighting your chart is critical! After completing chart preparation for the route, see how your chart looks in a dark environment by utilizing the same light that will be used in the aircraft. Will you be able to read or navigate off your chart? Don't let the first time you look at your chart in the dark be when you are sitting in the aircraft on the V4003!

Lastly, I end with a syllabus update; a waiver to remove the NVG CAI (N0101) from the syllabus has been approved. An email regarding this change has been disseminated. Please let me know if you have any further questions.

LT Blade “Mr. Incredible” Schallenberger

Open Door Sessions

In response to feedback from student critiques, we have implemented open door sessions to provide additional opportunities for SNAs to review discussion items with IPs. We continue to receive positive feedback from students who have benefited from these sessions. I would like to thank all of those who have volunteered their time and encourage those who have not yet facilitated an open door session to do so as it is a great opportunity to share your knowledge with the next generation of Naval Aviators.

The calendar, with available sessions, is posted on the STAN board. Sessions are every Tuesday and Thursday from 1400-1700 and will include one of the following as the “focus topic” for the day: 1) JMPS / Chart Preparation, 2) Airspace, 3) NAV / Form / NVD Brief, 4) Instrument Flight Publications. SNAs are encouraged to snivel for attendance.

LT Kevin “CheeEeE” Goettsche

Standardization Office Staff

STAN-O Maj Addison

CAT I LT Urkowitz

CAT II LT Cosky

CAT III LT Kirkpatrick

CAT IV LT Schallenberger

TRAIN-O LT Goettsche