Literacy in Aviation: Aeronautical Inscriptions Take Flight

LUCAS WEBER
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Introduction

On a cold December morning at the Orlando-Sanford International Airport, I arrive at the airport with a flight plan I completed earlier. Along with the keys and logbook for the plane, I tuck everything under my arm and head out onto the tarmac with my hands deep inside my pockets to stay warm. I pull out the pre-flight checklist and start my inspection of the plane, by adjusting the flaps, manipulating the control surfaces, checking the oil level, even the fuel sumps. As I try turning the key in the cockpit, the engine starts to sputter and die out. I prime the ignition by pumping the lever a few times while shivering in my seat and waiting for the heater to kick in. With my hand pumping the throttle and coursing the engine, I turn the key again, and it finally starts. The steady roar of the propeller marks the start of a great day. Tuning the radio frequency to 125.97, I listen attentively and jot down the weather conditions along with other relevant information, then switch to 123.97 to request clearance, "Sanford Clearance, Skyhawk 9413H at Constant requesting VFR to the North at 2,500 with Echo." Once I get the go ahead, I'm ready to fly.

Summation of Relevant Research

Normally, the important role that literacy plays in flight goes unnoticed, but after extensive research, it becomes evident that literacy is ubiquitous in aviation. Two inquiries into literacy inscriptions in aviation reveal that nearly every task is enhanced with their incorporation, and how the most vital inscriptions are hand-drawn. Evidence of literacy in different activities that can be tied to aeronautics have been found in research from Roth and McGinn, Halvey, Hassan, Hutchins, and Witte.

A revolutionary notion that expands our view on the reaches of literacy, coined "inscription," offers additional depth to the definition of writing. The term replaces "representation," a mental designation of writing, whereas inscriptions are physical pieces that may not necessarily be reducible to alphabetical text. In Wolff-Michael Roth and Michelle McGinn's "Inscriptions: Toward a Theory of Representation as Social Practice," they assign a set of characteristics to inscriptions, mainly, that they are "materially embodied in some medium, such as paper or computer monitors" (37). Inscriptions are crucial to aviation, they make difficult activities digestible through mediums, such as diagrams, graphs, and visual illustrations.

Handwritten inscriptions make activities exponentially easier. Madeline Halvey, in "Simple Forms of Dance and Movement Literacy," explores how Briana, a ballet instructor, makes use of handwritten inscriptions, "Briana writes cast lists, movement words, positions, and 'other things [she] wants to emphasize'-all of which are supplemented by small drawings' to visually supplement her text" (30). These handwritten notes, diagrams and small pictures, are jotted down while the class is in session such that is uniquely and immediately understandable to Briana. The notes make

it possible for her to later verbalize corrections to the choreography. Comparable types of handmade inscriptions are seen throughout the logistics of flying, whether it's jotting down weather patterns, specific frequencies, or mental diagrams for later reference. The most beneficial aspect of these inscriptions being handmade, and thus unique and individualized, is that each is solely dedicated to streamlining the writer's task at hand.

Another uncovered link in the extensive influence of inscriptions is greeting cards. Komysha Hassan wrote in depth about how greeting cards affected her life, and how they molded her into the person she is today. In her article, "More Than a Marker for the Passage of Time," she asserted that an inscription "is a communicative tool that is 'dynamic and interactive,' providing a means to 'extend the functions of language'" (3). Furthermore, Hassan stresses the importance of personally generating inscriptions and the indispensable aid they can provide to an activity. Greeting cards are most effective when they are handwritten, and similarly, plans related to flying should be self-generated. Many pre-flight inscriptions for aeronautics are already self-made, and most effective because they are individualized.

Stephen P. Witte contributes with his research in "Context, Text, Intertext: Toward a Constructivist Semiotic of Writing" by questioning if a student's guidebook to indigenous plants, which consisted of traditional alphabetic text, photographs, and line drawings, should be studied as writing and non-writing, rather than as a holistic product (246). Witte's findings challenge the limits of what defines and limits, writing, and additionally supports Hassan's argument that such instances of non-writing communication should be hand-drawn. Through personally making inscriptions, the undergraduate student streamlines his project with various text, drawings, and photographs, all of which complement the understanding of everyone in the class.

Edwin Hutchins, who spent time aboard a U.S. Navy ship, examined the role of inscriptions as a memory aid in distance, rate and time problems related to sea travel. Many areas of seamanship are quite alike to aviation, this area included. Edwin Hutchins asserts in his book *Cognition in the Wild* that "the task performer has no need to know anything about these relations, either implicitly or explicitly. The correct relationships are built into the tool; the task performer simply aligns any two scales to constrain the value of the third. Even more important, the incorrect relations are 'built out' —it is not possible to produce those relations with these tools" (151). Hutchins shows that inscriptions make performing complex tasks manageable in almost any activity.

There is not a vast amount of scholarship addressing aspects of literacy in flight, however, Hutchins is one of the few who have examined inscriptional activities taking place in the cockpit. In Hutchins' research on speed bugs in modern day commercial airliners, he touched on the necessity of inscriptions in his article "How a Cockpit Remembers its Speed" by explaining that the pilot sets speed bugs to depict the desired airspeed and "impose additional meaningful structure on the image of the ASI (air speed indicator). They use the bugs to define regions of the face of the ASI, and they associate particular meanings with those regions" (281). These regions on the ASI are critical inscriptions for tracking speed and remaining within safe velocities. However, his research discusses Navy ships at sea and aviation in the cockpit. I believe that inscriptions are just as crucial, if not more, in the pre-flight aspect of aviation.

Hutchins has the most relevant research to flight, but each of these scholars are all deeply involved in redefining the boundaries of literacy, expanding its presence to previously excluded activities, such as ballet, science projects, greeting cards, naval ships, and aviation. Each scholar has advocated the necessity of inscriptions in their activity and in my paper, I will analyze their importance in flying.

The purpose of my study is to explore the literacy inside aviation; more specifically, in note taking, flight planning, and weather preparations. To further my research into the area of study, I will look into literacy activities related to flight and draw comparisons to answer the following questions: How important is literacy to an activity like aeronautics? How do inscriptions aid in the

process of preparing for flight? What benefits do handmade notes and inscriptions provide that make them so helpful?

Methodology

For my research, I focused on personal data collected from my own flights. Over the course of the paper, I will cover literacy throughout my history in aviation including classroom training, flight training, and mainly literacy in aeronautical pre-flight. I compared data that I gathered from my own experience to that of other scholarly researchers to extend the conversation concerning literacy as well as the use of inscriptions in flight. I compiled various media containing inscriptions, ranging from handwritten, print, and digital, all of which I personally use during my flights. These include pre-flight checklists, flight plans, my personal notes, and weather charts. I chose these inscriptions because as a set, they provide the most holistic examples of literacy in aviation

I focused specifically on inscriptions centered around pre-flight since, in the cockpit, there is an entirely different set of literary elements that would require extensive research on their own. By focusing solely on pre-flight inscriptions, I can research in depth their benefits and necessity to my steps required before taking off. I keep these inscriptions in my knee board, which I attach to my leg to use in the cockpit. Their easy access allows me to review my notes, in addition to writing new ones while in flight.

The following inscriptions were accumulated over the course of 4 years. In the first 2 years, I learned how to use charts, diagrams, and other aviation related inscriptions. Extensive training and book work were required in order to safely operate an aircraft. Over the last 2 years, I started flying and used the experience to learn how to write effective types of aeronautical inscriptions.

Research into Aviation

When you think about flying, inscriptions are not typically something that comes to mind. However, this inscriptional literacy is a crucial part of flying an airplane. Inscriptional activities related to aeronautics are concealed, despite being extensively integrated into the fabric of the aeronautical study and practice, that even pilots, including myself, don't recognize their sheer necessity. Inscriptional activities are evident in every aspect of aviation; some of the most important reveal themselves before the aircraft even lifts off the ground. I argue that, for a pilot, a select few necessary inscriptions used to prepare for a flight can mean the difference between a safe flight and a catastrophe. The intricate inscriptions which aeronautics demands facilitate safe piloting, serving as the very backbone of each flight.

The pre-flight checklist (Figure 1) is a simplified guide for airworthiness that streamlines walk arounds of the aircraft while on the tarmac. The checklist ensures airworthiness by validating each aspect of the plane is in working condition. It is the first artifact which made evident the involvement of inscriptions. It is my own, invaluable resource with signs of wear from its heavy use. This checklist is the type of inscription that conforms to the characteristics of a true inscription. In the upper left, the drawing of the aircraft has a series of connected numbers, which correspond to the numbered checklist. They demonstrate the locations where I should be while performing that particular inspection. In "Inscriptions: Toward a Theory of Representing as Social Practice," Wolff-Michael Roth and Michelle McGinn expanded on the characteristics of inscriptions by stating that "several inscriptions are easily combined and superimposed, leading to their heterogeneous and layered character" (38). This checklist concretizes a mental representation into a tangible inscription that adapts to its purpose. Included in the figure are notes which remind me to perform practices that I usually forget. For example, one part has "lights, camera, action" penciled in underneath the bottom of the "VFR line up" section. Without context or explanation, it may be perplexing, but it is a motto from my instructor reminding me to check the lighting elements

(lights), the transponder (camera), and the throttle, fuel mixture, flaps, trim, and fuel valve (action). Personal notes like this are something that goes over the head of others, but carry immense significance for the individual.

Figure 1: Pre-flight checklist used to ensure airworthiness of an aircraft.

I also have a checklist for situations such as engine failure. My instructor drilled the lesson into me to memorize the inscriptions well enough that I could recite them step by step in a matter of seconds. In urgent times like an engine failure or imminent collision, being a good pilot means using the muscle memory of memorized actions guided by inscriptions; so much so that it feels like instinct. Through practicing engine failure countless times, it has become second nature to immediately start the steps that I have so deeply memorized throughout my practice.

Weather data, collecting it and interpreting it is vital in preparation for flying. Maps and drawings of changing weather, owed to their visual and subjective nature, are inscriptional. Pilots need a high level of understanding; they need to be literate about weather. An aviation forecast (Figure 2), is so complex that without prior knowledge on how to decode the chart, one wouldn't recognize its function as a literary device. This device is crucial to the safety of myself and other pilots from its predictions of weather in the near future.

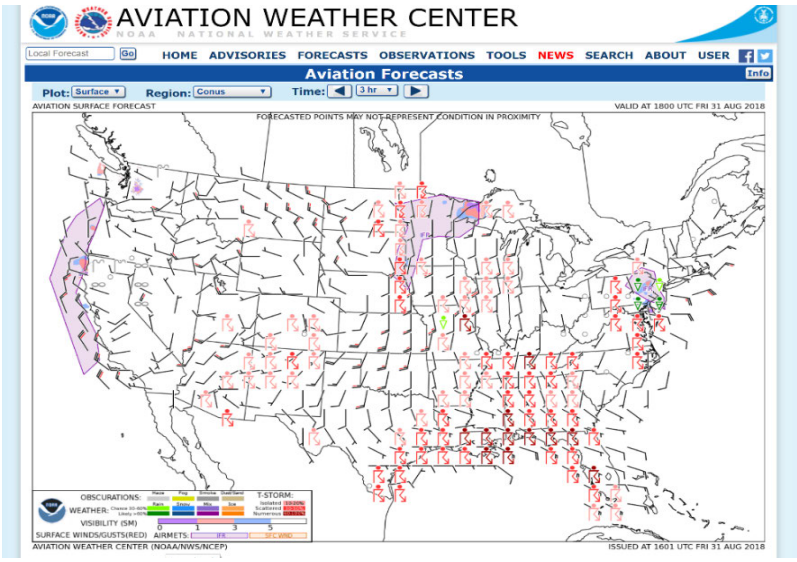
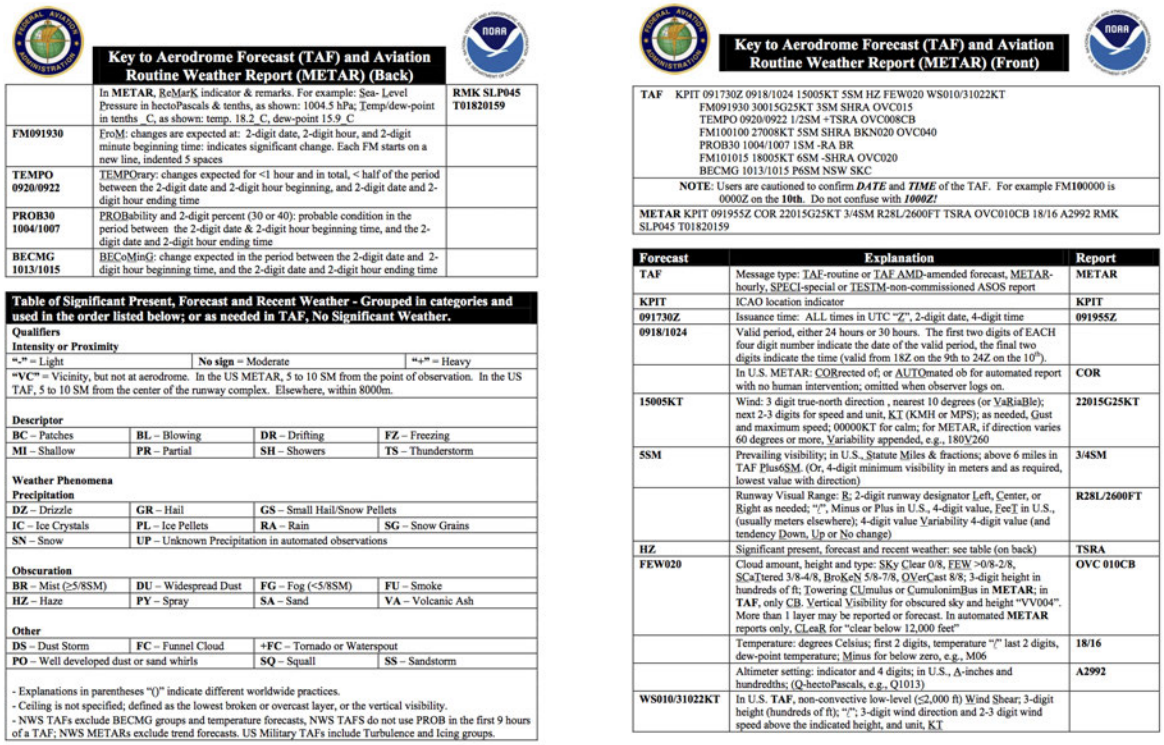


Figure 2: A chart depicting a future wind and rain

This chart provides a forecast for a set time and displays the wind conditions, rain chances, thunderstorm probability, and even icing conditions. Embedded inside this inscription are even more inscriptions; the backwards L's mark wind direction and wind speed, the illustrations that look like a capital R marks thunderstorms, and the inverted triangles mark rain showers. As each illustration darkens in color, the chance of the depicted weather phenomena increases. I use these charts before every flight to take a look into what the weather may look like when I am going to land.

METAR's (Figure 3) are a string of numbers and complex abbreviations used to depict various weather instances happening in the present. METAR'S include data, on the airport name, time of publish, wind speed and direction, visibility distance, significant weather, cloud coverage, temperature and dew point, and the altimeter setting measured in inches of mercury displaced. Figure 3 serves to aid in the decoding of METAR's by deciphering the dozens of abbreviations that are strung together to make the report; a case of one inscription being used to translate another.



Key to Aerodrome Forecast (TAF) and Aviation Routine Weather Report (METAR) (Back)

	In **METAR**, ReMarK indicator & remarks. For example: Sea- Level Pressure in hectoPascals & tenths, as shown: 1004.5 hPa; Temp/dew-point in tenths _C, as shown: temp. 18.2_C, dew-point 15.9_C	**RMK SLP045 T01820159**
FM091930	FroM: changes are expected at: 2-digit date, 2-digit hour, and 2-digit minute beginning time: indicates significant change. Each FM starts on a new line, indented 5 spaces	
TEMPO 0920/0922	TEMPOrary: changes expected for <1 hour and in total, < half of the period between the 2-digit date and 2-digit hour beginning, and 2-digit date and 2-digit hour ending time	
PROB30 1004/1007	PROBability and 2-digit percent (30 or 40): probable condition in the period between the 2-digit date & 2-digit hour beginning time, and the 2-digit date and 2-digit hour ending time	
BECMG 1013/1015	BECoMinG: change expected in the period between the 2-digit date and 2-digit hour beginning time, and the 2-digit date and 2-digit hour ending time	

Table of Significant Present, Forecast and Recent Weather - Grouped in categories and used in the order listed below; or as needed in TAF, No Significant Weather.

Qualifiers			
Intensity or Proximity			
"-" = Light	**No sign** = Moderate		**"+"** = Heavy
"VC" = Vicinity, but not at aerodrome. In the US METAR, 5 to 10 SM from the point of observation. In the US TAF, 5 to 10 SM from the center of the runway complex. Elsewhere, within 8000m.			
Descriptor			
BC – Patches	**BL** – Blowing	**DR** – Drifting	**FZ** – Freezing
MI – Shallow	**PR** – Partial	**SH** – Showers	**TS** – Thunderstorm
Weather Phenomena			
Precipitation			
DZ – Drizzle	**GR** – Hail	**GS** – Small Hail/Snow Pellets	
IC – Ice Crystals	**PL** – Ice Pellets	**RA** – Rain	**SG** – Snow Grains
SN – Snow	**UP** – Unknown Precipitation in automated observations		
Obscuration			
BR – Mist (≥5/8SM)	**DU** – Widespread Dust	**FG** – Fog (<5/8SM)	**FU** – Smoke
HZ – Haze	**PY** – Spray	**SA** – Sand	**VA** – Volcanic Ash
Other			
DS – Dust Storm	**FC** – Funnel Cloud	**+FC** – Tornado or Waterspout	
PO – Well developed dust or sand whirls	**SQ** – Squall	**SS** – Sandstorm	

- Explanations in parentheses "()" indicate different worldwide practices.
- Ceiling is not specified; defined as the lowest broken or overcast layer, or the vertical visibility.
- NWS TAFs exclude BECMG groups and temperature forecasts, NWS TAFS do not use PROB in the first 9 hours of a TAF; NWS METARs exclude trend forecasts. US Military TAFs include Turbulence and Icing groups.

Key to Aerodrome Forecast (TAF) and Aviation Routine Weather Report (METAR) (Front)

TAF KPIT 091730Z 0918/1024 15005KT 5SM HZ FEW020 WS010/31022KT
FM091930 30015G25KT 3SM SHRA OVC015
TEMPO 0920/0922 1/2SM +TSRA OVC008CB
FM100100 27008KT 5SM SHRA BKN020 OVC040
PROB30 1004/1007 1SM -RA BR
FM101015 18005KT 6SM -SHRA OVC020
BECMG 1013/1015 P6SM NSW SKC

NOTE: Users are cautioned to confirm ***DATE*** and ***TIME*** of the TAF. For example FM**10**0000 is 0000Z on the **10th**. Do not confuse with ***1000Z!***

METAR KPIT 091955Z COR 22015G25KT 3/4SM R28L/2600FT TSRA OVC010CB 18/16 A2992 RMK SLP045 T01820159

Forecast	Explanation	Report
TAF	Message type: TAF-routine or TAF AMD-amended forecast, METAR-hourly, SPECI-special or TESTM-non-commissioned ASOS report	**METAR**
KPIT	ICAO location indicator	**KPIT**
091730Z	Issuance time: ALL times in UTC "Z", 2-digit date, 4-digit time	**091955Z**
0918/1024	Valid period, either 24 hours or 30 hours. The first two digits of EACH four digit number indicate the date of the valid period, the final two digits indicate the time (valid from 18Z on the 9th to 24Z on the 10th).	
	In U.S. METAR: CORrected of; or AUTOmated ob for automated report with no human intervention; omitted when observer logs on.	**COR**
15005KT	Wind: 3 digit true-north direction , nearest 10 degrees (or VaRiaBle); next 2-3 digits for speed and unit, KT (KMH or MPS); as needed, Gust and maximum speed; 00000KT for calm; for METAR, if direction varies 60 degrees or more, Variability appended, e.g., 180V260	**22015G25KT**
5SM	Prevailing visibility; in U.S., Statute Miles & fractions; above 6 miles in TAF Plus6SM. (Or, 4-digit minimum visibility in meters and as required, lowest value with direction)	**3/4SM**
	Runway Visual Range: R; 2-digit runway designator Left, Center, or Right as needed; "/", Minus or Plus in U.S., 4-digit value, FeeT in U.S., (usually meters elsewhere); 4-digit value Variability 4-digit value (and tendency Down, Up or No change)	**R28L/2600FT**
HZ	Significant present, forecast and recent weather: see table (on back)	**TSRA**
FEW020	Cloud amount, height and type: SKy Clear 0/8, FEW >0/8-2/8, SCaTtered 3/8-4/8, BroKeN 5/8-7/8, OVerCast 8/8; 3-digit height in hundreds of ft; Towering CUmulus or CumulonimBus in **METAR**; in **TAF**, only CB. Vertical Visibility for obscured sky and height "VV004". More than 1 layer may be reported or forecast. In automated **METAR** reports only, CLeaR for "clear below 12,000 feet"	**OVC 010CB**
	Temperature: degrees Celsius; first 2 digits, temperature "/" last 2 digits, dew-point temperature; Minus for below zero, e.g., M06	**18/16**
	Altimeter setting: indicator and 4 digits; in U.S., A-inches and hundredths; (Q-hectoPascals, e.g., Q1013)	**A2992**
WS010/31022KT	In U.S. **TAF**, non-convective low-level (≤2,000 ft) Wind Shear; 3-digit height (hundreds of ft); "/"; 3-digit wind direction and 2-3 digit wind speed above the indicated height, and unit, KT	

Figure 3: An example of a METAR and instructions on how to decode them.

I collect this data the morning of the flight and the moments just prior to taking off by listening to a frequency called ATIS (Automatic Terminal Information Service). While listening to the ATIS, I jot down the key points (Figure 4) along with other information like important frequencies and clearances from air traffic control. These clearances consist of frequencies to call, headings to follow, and altitudes to maintain. Each time I listen to the ATIS, an identifier is given to label the weather information. When I talk to air traffic control, I can say "with ___" at the end of my transmission to inform them I am concurrent with the weather. These identifiers are different letters of the phonetic alphabet; in Figure 4 you can see examples of these identifiers like "Yankee", "Quebec", or "Oscar." Sometimes I draw visual geographical diagrams, like the one at the bottom of Figure 4, of what is in my head to help me perform what is required of me while flying, which supports Roth and McGinn's notion of how "inscriptions can be merged with geometry" (38).

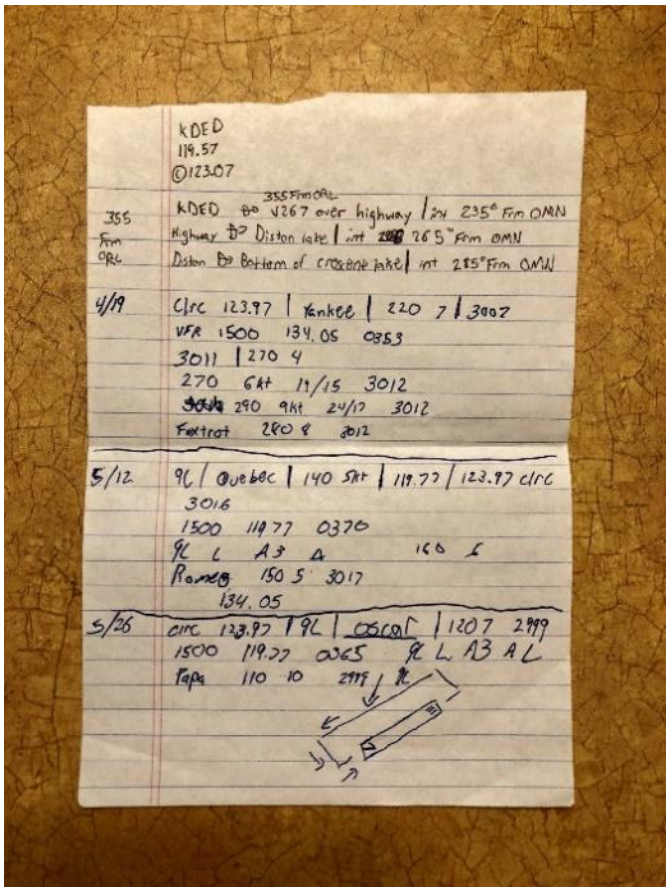


Figure 4: My personal flight notes

I view the weather-related inscriptions in Figures 2, 3, and 4 as arguably the most important to a pilot. Pilots spend months using inscriptions like these to learn about weather, how to foresee it, how to avoid it, and if worse comes to worst, how to escape it. A good pilot will spend countless hours scouring over textbooks to educate themselves with text, along with reviewing the inscriptions which provide an indispensable pedagogical aid. Throughout each of the inscriptional activities I have taken part in, those are the only ones which I would label as life and death.

On longer flights, I spend time making an inscription, essentially from scratch, called a flight plan. Flight plans are made as a safety precaution and are filed with the FAA (Federal Aviation Administration) so that in the event something happened while flying and the pilot never makes it to the destination, rescue teams know where to look. Roth and McGinn claim that "inscriptions are produced to keep track of people" which in this case is proved true (45). Flight plans also act as a directional aid and displays which way to turn and when to make the turn assisting in the journey from point A to point B. Pictured above (Figure 5) is an example of one of my flight plans where I flew from KSFB (Orlando-Sanford International) to KCGC (Crystal River Airport). This inscription is jam-packed with details, which allows me to understand estimated time arrival, wind correction angle (the amount of degrees I must turn into the wind to fly in a straight line), fuel burn, fuel level, airspeed, groundspeed, altitude, and distance. On longer flights, a flight plan assists in the understanding of how to get to the destination and what inputs I need to enter into the controls to get there. Before I fly, I call the FAA and provide all information on the flight plan with my route and estimated flight time in order to provide VFR flight following provided by air traffic control. Flight following is like the navigation voice in a GPS giving a person direction. With this aid, following along with the GPS is one less thing I have to worry about in flight. By giving the FAA this

information, they are also able to determine where I may have crashed if any accidents occur during the flight.

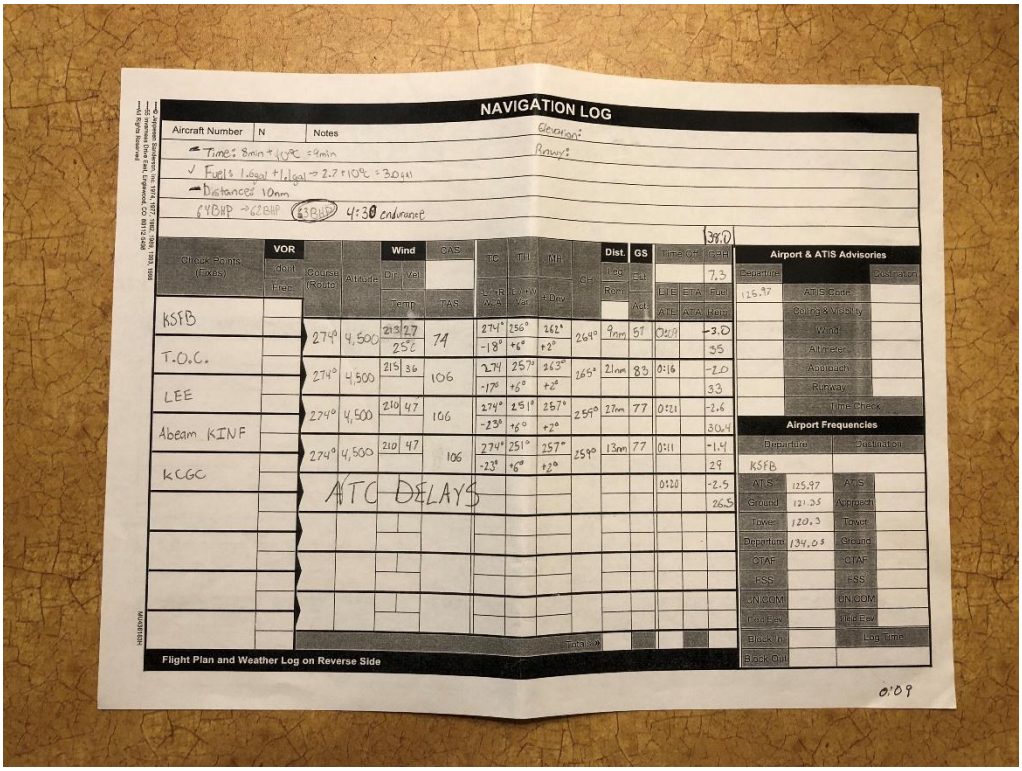


Figure 5: One of my previous flight plans

Figures 4 and 5 are my two main handwritten inscriptions that I produce from scratch. These two inscriptions have to be handmade because they rely on a certain number of variables that are unknown until the day of a flight including wind conditions, altimeter settings, and airport operations. I create these before almost every flight to aid me in the cockpit to make my job in the air that much easier. These inscriptions allow me to focus on the complex areas of flight like the numerous instruments, communication, or other traffic in the area instead of worrying about my heading or where the wind is coming from. This type of handmade inscription has saved me numerous times when I was stuck in situations where all of my focus is needed elsewhere. Having my handwritten inscriptions written in front of me allows me to glance at it without having to think.

This analysis proves writing is much more complex than I previously thought. As a pilot, my inscriptions have shown writing is more than generic pen on paper text. Inscriptions have shown that writing, what many see as only alphabetic words on a paper, has roots that expand into almost every aspect of a person's daily life, which has shaped me into the successful pilot I am today. Experiencing first-hand just how much writing has a grasp on aviation inspired me to open my eyes into writing in other areas of my life. In aviation, I have found them in everything from printed pre-flight checklists to notes I scribble down in an aircraft cockpit. Writing has become a device used to provide me the comfort of safety every time I take off and head into the air, a device that aviation would not be possible without. Without a handful of simple texts I would not be able to do something as complex as fly an airplane.

Discussion

Over the course of my research, I investigated flight logs, checklists, weather charts, and handmade notes. These examples are a select few of the many practices used in aviation which I find include literary elements through the form of inscriptions or traditional alphabetic text. If you look beyond these few examples and view aviation as one big picture, it becomes clear that the complexity of something like flying a plane would not be possible without some form of literacy at its core. This literacy, mainly through inscriptions, is the very center of aviation and what makes the whole activity possible.

Throughout my research I look to find the true definition of writing. Is alphabetic text the only form of literacy there is? Before researching inscriptions, I never would have imagined that literacy could be found in forms other than books and essays, but with the introduction of inscriptions, literacy is everywhere. I believe that the charts and handwritten inscriptions evident in aviation are a prime example of an extension of literacy. In studies relating to inscriptional use, Witte touches on an undergraduate student's "guidebook to indigenous plants" where he argues that this guidebook should be considered as literacy, including the pictures, diagrams, photos, and alphabetic text. Pre-flight literacy contains much of the same inscriptions as the student's guidebook and, in some places, inscriptions take up even more of the activity than actual alphabetic text.

A different extension of literacy would also be my handwritten inscriptions. These types of inscriptions are dynamic and interactive as I formulate these notes while listening to the weather forecast or preforming my checklist so that it will be easier for me to perform tasks in the future. Similarly, Halvey discusses the amount of handwritten work she personally makes in her ballet classes to later look back on and make corrections to her choreography. Her drawings are personalized to what she needs to benefit herself as much as possible when looking back on these drawings. In pre-flight aviation, this is perhaps the biggest type of inscriptional activity that takes place in preparation for a flight. I develop flight plans, jot down notes to read while flying, and relay information to air traffic controllers. I find that Halvey and Hassan's work supports my finding the handmade inscriptions are the most beneficial to me.

Inscriptions in flight are constantly changing as well. I always find myself penciling in additional details into inscriptions helping me remember an action I forget to do or a radio frequency I need to call once in the air. I make notes in the margins of my checklists and flight plans to make it easier to look back on later. Different form the aforementioned scholars, Hutchins' research on the subject is more closely aligned with my research. This finding is also supported by Hutchins who believed pilots implement additional meaning on inscriptions to further their ease of use. Hutchins asserted that inscriptions, or what he referred to as "tools", are made specific to the task at hand with incorrect relations built out. Charts, flight plans, and checklists are all made specific to the task at hand so that incorrect results cannot be given while being used.

In further research, I see my data expanding the conversation on literacy and, more specifically, in aviation to open a conversation on pre-flight inscriptional activity. So much goes into preparing for a flight that has been untouched by studies and can extend the topic of defining literacy. I believe that pre-flight inscriptions are crucial to the smooth operation of an aircraft and that, without this form of literacy, flight would not be possible. Scholars like Hutchins and Witte who are looking to expand the definition of writing should turn to the untouched area of pre-flight aviation to define the very basis of literacy.

My research also hopes to extend not only the definition of writing but how it is taught to students in the future. Currently, writing is taught through reading text, analyzing the text, and formulating an essay about the text. My research on inscriptions in aviation proves that this is not the only writing that occurs in a student's life. Writing is seen in every aspect of a person's life and it would make sense that it should be taught that way too. Students should research literacy in areas

that spark their interests. Schools provide classes that specialize in certain majors (ex. Chemistry for Engineering majors). My proposition is to introduce English classes for students specializing in their major or field of interest. As a pilot, many of the inscriptions I rely on while planning a flight and in flight took months of learning to understand. If an aspiring pilot could take classes focused on aeronautical inscriptions, their understanding of inscriptions critical to the field would accelerate. English classes focused around aviation text would increase knowledge of aviation as well as flight performance.

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Lucas Weber

Lucas Weber is currently a Sophomore at the University of Central Florida and a member of the Burnett Honors College. An Aerospace Engineering major that loves to be in the air, he aspires to become a career military pilot flying C-17's and later find a job with a company such as Lockheed Martin, NASA, or even SpaceX. With a passion for building things, he plans to minor in electrical engineering to further his knowledge and capabilities in the engineering field.