

A road with multiple yellow diamond-shaped signs: a question mark, a left turn, a right turn, and a Y-junction.

Clearance Adherence & Loss of Communication Procedures

Brian Schiff

www.CaptainSchiff.com

Clearance Adherence & Loss of Comm.

Plan

Clearance Adherence

Communications

Loss of Communications



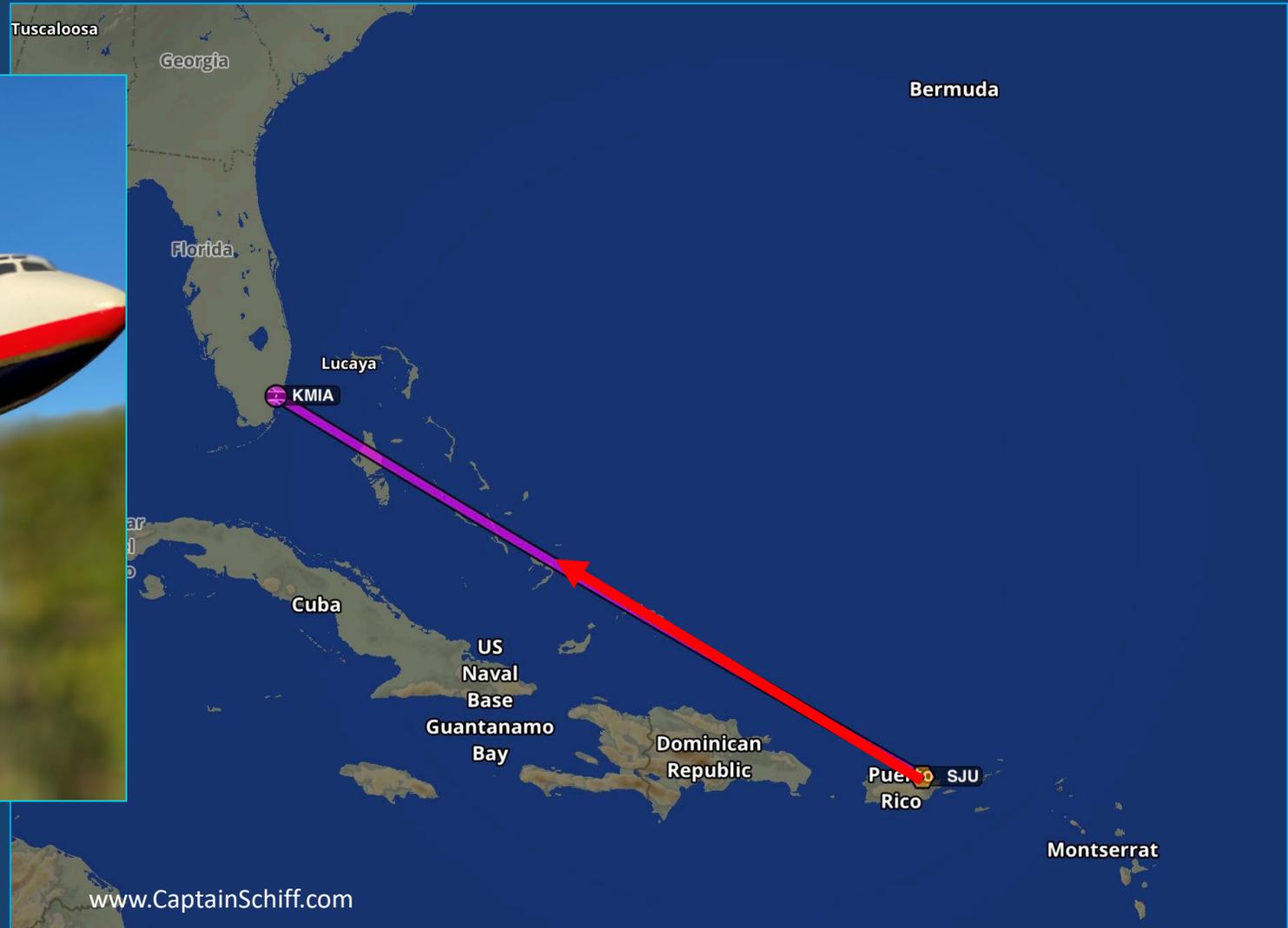
4-4-10 Adherence to Clearance

a. When air traffic clearance has been obtained under either visual or instrument flight rules, the pilot-in-

Clearance Adherence

Clearance Adherence

There I was...



Clearance Adherence

Filed Flight Plan

- Know what you filed!
 - Route
 - Altitude
 - ETE
 - TAS

Also note takeoff time!

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION				(FAA USE ONLY) <input type="checkbox"/> PILOT BRIEFING <input type="checkbox"/> VNR		TIME STARTED	SPECIALIST INITIALS			
FLIGHT PLAN										
1. TYPE		2. AIRCRAFT IDENTIFICATION		3. AIRCRAFT TYPE/SPECIAL EQUIPMENT		4. TRUE AIRSPEED	5. DEPARTURE POINT	6. DEPARTURE TIME	7. CRUISING ALTITUDE	
<input type="checkbox"/> VFR	<input type="checkbox"/> IFR	<input type="checkbox"/> DFR				KTS		PROPOSED (Z)	ACTUAL (Z)	
8. ROUTE OF FLIGHT										
PHONE NUMBER & AIRCRAFT HOME BASE										
15. NUMBER ABOARD										
CITY/TELEPHONE (OPTIONAL)										
FRR flight plan to operate under instrument flight rules in reality not to exceed \$1,000 for each violation (Section 901 of the R flight plan is recommended as a good operating practice. See also										
FSS ON ARRIVAL										

Approved OMB No. 2120-0026
Exp. 7/31/2020

U.S. Department of Transportation
Federal Aviation Administration

International Flight Plan

PRIORITY: **<=FF** ADDRESSEE(S): _____

FILING TIME: _____ ORIGINATOR: _____

SPECIFIC IDENTIFICATION OF ADDRESSEE(S) AND / OR ORIGINATOR: _____

3 MESSAGE TYPE: **<=(FPL)** 7 AIRCRAFT IDENTIFICATION: _____ 8 FLIGHT RULES: TYPE OF FLIGHT:

9 NUMBER: _____ 9 NUMBER: _____ TYPE OF AIRCRAFT: _____ WAKE TURBULENCE CAT.: _____ 10 EQUIPMENT: _____

13 DEPARTURE AERODROME: _____ TIME: _____

15 CRUISING SPEED: _____ LEVEL: _____ ROUTE: _____

16 DESTINATION AERODROME: _____ TOTAL EET: _____ HR MIN: _____ ALTN AERODROME: _____ 2ND ALTN AERODROME: _____

18 OTHER INFORMATION: _____

SUPPLEMENTARY INFORMATION (NOT TO BE TRANSMITTED IN FPL MESSAGES)

19 ENDURANCE: _____ HR MIN: _____ PERSONS ON BOARD: _____ EMERGENCY RADIO: _____ UHF: VHF: ELT:

—E/ _____ P/ _____ R/ U V E

SURVIVAL EQUIPMENT: POLAR: DESERT: MARITIME: JUNGLE: JACKETS: LIGHT: FLUORES: UHF: VHF:

DINGHIES: NUMBER: _____ CAPACITY: _____ COVER: _____ COLOR: _____

D/ _____ C/ _____

A/ AIRCRAFT COLOR AND MARKINGS: _____

N/ REMARKS: _____

C/ PILOT-IN-COMMAND: _____

FILED BY: _____ ACCEPTED BY: _____ ADDITIONAL INFORMATION: _____

FAA Form 7233-4 (7/15)



Clearance Adherence

Resources

Federal Aviation Regulations

- 91.167 – 91.193 Instrument Flight Rules

Aeronautical Information Manual (AIM)

- Chapter 4 – Air Traffic Control
- Chapter 5 – Air Traffic Procedures



Clearance Adherence

FAA Flight Plan

Topic

The diagram shows a flight plan form with the following fields and annotations:

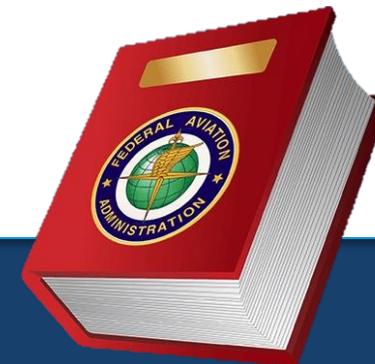
- Aircraft "N" Number**: Points to field 6 NUMBER.
- "V" - VFR**: Points to field 8 FLIGHT RULES.
- "I" - IFR**: Points to field 8 FLIGHT RULES.
- Aircraft Type (e.g. C172)**: Points to field 7 AIRCRAFT IDENTIFICATION.
- Departure Airport**: Points to field 13 DEPARTURE AERODROME.
- Departure Time (Zulu)**: Points to field 14 TIME.
- Cruising Airspeed**: Points to field 15 CRUISING SPEED.
- Initial Cruising Altitude**: Points to field 15 CRUISING SPEED.
- Destination Airport**: Points to field 16 DESTINATION AERODROME.
- Other Information**: Points to field 18 OTHER INFORMATION.

Other fields include: 3 MESSAGE TYPE, 9 NUMBER, 10 EQUIPMENT, 11 TYPE OF AIRCRAFT, 12 WAKE TURBULENCE CAT., 14 TIME, 15 CRUISING SPEED, 16 DESTINATION AERODROME, 17 TOTAL EET (HR MIN), 18 OTHER INFORMATION, 19 ALTN AERODROME, and 20 2ND ALTN AERODROME.

§91.173 ATC clearance and flight plan required.

No person may operate an aircraft in controlled airspace under IFR unless that person has—

- (a) Filed an IFR flight plan; and
- (b) Received an appropriate ATC clearance.

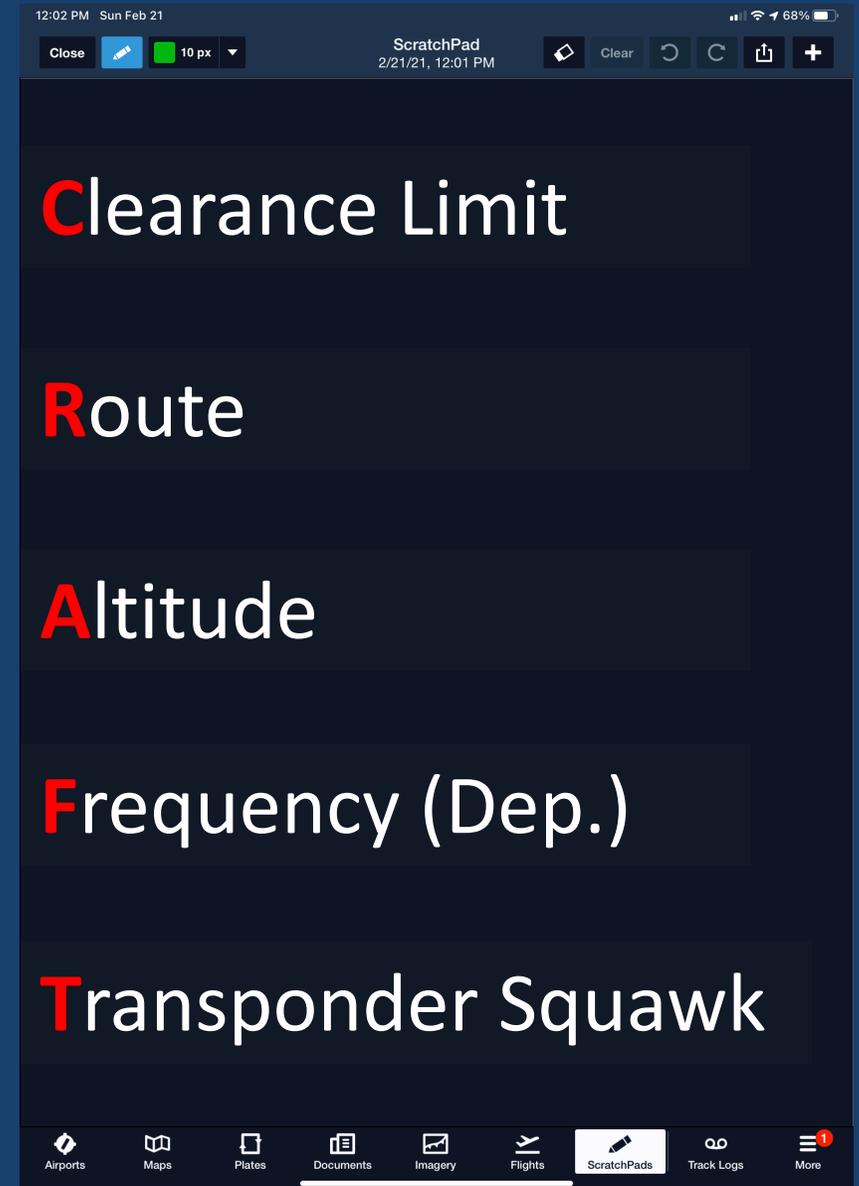


Clearance Adherence

Pre-Departure Clearance



www.CaptainSchiff.com



Clearance Adherence

AIM 4-4-7



Pilot Responsibility upon Clearance Issuance

- a. Record ATC Clearance (written)
- b. ATC Clearance/Instruction Readback
 - 1. Include ID in readbacks & acknowledgments
 - 2. Repeat the clearance in the sequence given
 - 3. Do not read back published altitudes unless stated by ATC
 - 4. Taxi, departure/landing clearance should include runway
- c. **PIC responsibility to accept or refuse clearance issued!**

POLL



Clearance Adherence

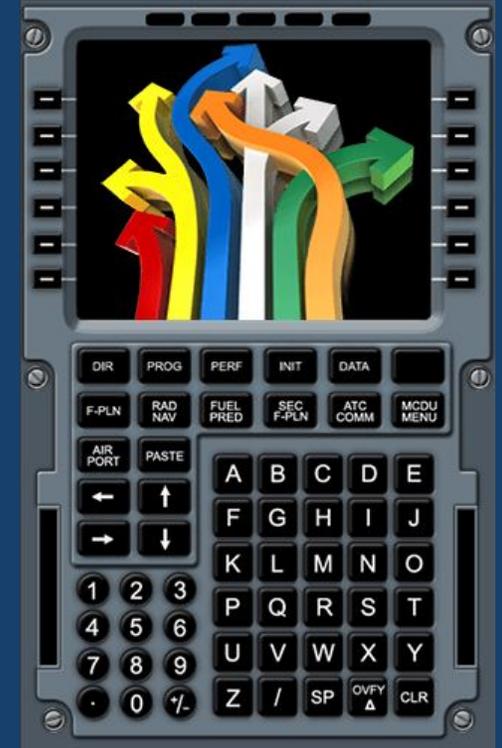
“Cleared as Filed”

- DP or SID and transition must be restated (even if filed)
- STARs considered part of the filed flight plan
- Does not include altitude (must be stated or in SID)
- “Blah blah blah ... then as filed”
- “As filed, except ... blah blah blah”

Avoid making last-minute changes to flight plan.

If you do ... request a full-route clearance.

If you don't request clarification, it will be assumed you understood.



Clearance Adherence

Expect Departure Clearance Time (EDCT)

- Runway release time for traffic management program
- Must depart +/- 5 minutes of EDCT
- Usually for flow control into a busy airport (LAS during NBAA)



Clearance Adherence

Departing Uncontrolled Airport

- If practical obtain IFR clearance before departing when able.
- Clearance communication procedures in chart supplement.



Federal Aviation Administration

UNITED STATES GOVERNMENT FLIGHT INFORMATION PUBLICATION

**CHART SUPPLEMENT
SOUTHWEST U.S.**

Effective 0901Z **10 NOV 2016**
to 0901Z **05 JAN 2017**

NEVADA
UTAH
COLORADO
CALIFORNIA
ARIZONA
NEW MEXICO

Consult NOTAMs for latest information
Consult/Subscribe to FAA Safety Alerts and Charting Notices at:
http://www.faa.gov/air_traffic/flight_info/aeronav/safety_alerts/
Warning: Refer to current foreign charts and flight information publications
for information within foreign airspace
Published from digital files compiled in accordance with Interagency Air
Cartographic Committee specifications and agreements approved by:
Department of Defense • Federal Aviation Administration



Clearance Adherence

Clearance Void Time

- If not airborne by this time, clearance is expired.
- If not off by CVT ... advise ATC within 30 minutes
 - If you don't:
 - You'll be overdue and S&R will be initiated.
 - Other IFR traffic will be suspended
 - If you depart after CVT – you may be in violation of 91.173.



91.173 requires ATC clearance before operating IFR in controlled airspace.



Clearance Adherence



5-5-2. Air Traffic Clearance

a. Pilot.

4. Promptly complies with an air traffic clearance upon receipt except as necessary to cope with an emergency. Advises ATC as soon as possible and obtains an amended clearance, if deviation is necessary.

NOTE-

A clearance to land means that appropriate separation on the landing runway will be ensured. A landing clearance does not relieve the pilot from compliance with any previously issued altitude crossing restriction.



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



- a. PIC must not deviate from clearance.
“IMMEDIATELY” means now. Climb/descent does not authorize deviation from route or other part of clearance.



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



- b. When heading or turn assigned – you are expected to promptly initiate the turn, complete it, and maintain new heading unless given further instructions.



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



c. “AT PILOT’S DISCRETION” means you can begin the climb or descent when you wish to, at any rate, and level off at intermediate altitude.

BUT – once you vacate an altitude, you may not return to it.



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



d. If no, “AT PILOT’S DISCRETION” you must initiate climb/descent promptly. Use optimum rate for your aircraft until within 1,000’ of level off – then 500-1500 FPM.

Advise ATC if unable at least 500 FPM or if necessary, to level off (except 10,000’ MSL or 2,500’ AFE for speed reduction.



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



e. “CROSS AT or ABOVE/BELOW” – beginning descent and the rate of climb/descent are your discretion. Only applies to that fix. Comply with crossing restriction.

“AT PILOT’S DISCRETION” in any other clearance means how you execute it is optional.



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



Examples:

“Cessna 1AB, descend and maintain six thousand.”



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



Examples:

“Piper 2CD descend at pilot’s discretion, maintain six thousand.”



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



Examples:

“Bonanza 3EF, cross SoCal VOR at or above eight thousand, descend and maintain six thousand.”



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



Examples:

“TBM 4GH, cross SoCal VOR at six thousand, maintain six thousand.”



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



Examples:

“Cirrus 5IJ, descend now to eight thousand, cross SoCal VOR at or below six thousand, descend and maintain four thousand.”



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



Examples:

“Mooney 6KL descend now and maintain four thousand, pilot’s discretion after reaching eight thousand.”



Clearance Adherence

AIM 4-4-10 Adherence to Clearance



- f. If emergency authority is used to deviate from clearance, PIC must notify ATC ASAP.
- Obtain amended clearance.
 - Make report within 48 hours, if requested by ATC.



Adherence to Clearance

AIM 4-4-10 Adherence to Clearance



- g. The last clearance has precedence over the previous one. Anything still applicable will be restated. If not, they're cancelled – even SID/STAR altitude restrictions.



Adherence to Clearance

AIM 4-4-10 Adherence to Clearance

- i. “Expedite” is cancelled if issued another clearance and expedite clearance not restated.

Best rate climb/descent should be used without requiring exceptional change in aircraft handling characteristics. Normally, ATC gives reason.



Clearance Adherence

See and Avoid



5-5-8. See and Avoid

a. Pilot. When meteorological conditions permit, regardless of type of flight plan or whether or not under control of a radar facility, the pilot is responsible to see and avoid other traffic, terrain, or obstacles.



Clearance Adherence

Triggers

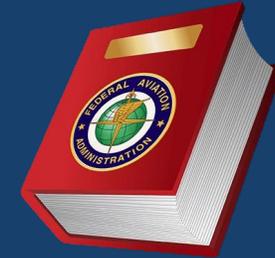


- “Fly heading ____, vectors to final”
 - Set navigator for approach
 - Vectors to final
 - Activate leg
 - Direct to?
 - STAY IN HEADING MODE
- “Cleared for the Approach”
 - Arm navigator for approach
 - Don’t confuse with “cleared to intercept”
 - Landing light on



Clearance Adherence

“Maintain Altitude until established...”



§91.175(i) Takeoff and Landing under IFR

When an approach clearance is received, maintain the last altitude assigned until the aircraft is established on a segment of a published route or instrument approach procedure unless a different altitude is assigned by ATC.



Clearance Adherence

“Cleared for the Approach”

- Blah blah blah blah **Heading 300**
blah blah blah blah blah blah
maintain 3,000' until established,
blah blah blah blah blah blah
blah blah blah **Cleared for the ILS**
27 Approach blah blah blah
blah blah blah blah blah blah
blah blah blah blah contact **tower**
at DAFIX.



Clearance Adherence

“Cleared for the Approach”

- Heading 300 maintain 3,000' Cleared for the ILS 27 tower at DAFIX.



Clearance Adherence

An Exercise

- Read the sentence below.
- Count the letter **F**s in the sentence.



FINISHED FILES ARE THE RESULT OF YEARS OF SCIENTIFIC STUDY COMBINED WITH THE EXPERIENCE OF MANY YEARS.





Clearance Adherence

An Exercise

- Read the sentence below.
- Count the letter Fs in the sentence.

Answer: 6

FINISHED **F**ILES ARE THE RE-
SULT **O**F YEARS **O**F SCIENTIF-
IC STUDY COMBINED WITH THE
EXPERIENCE **O**F MANY YEARS.



Clearance Adherence & Loss of Comm.

Plan

Clearance Adherence

Communications

Loss of Communications



Clearance Adherence & Loss of Comm.

Plan

Communications



Communications

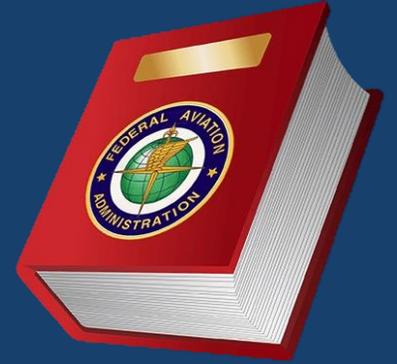
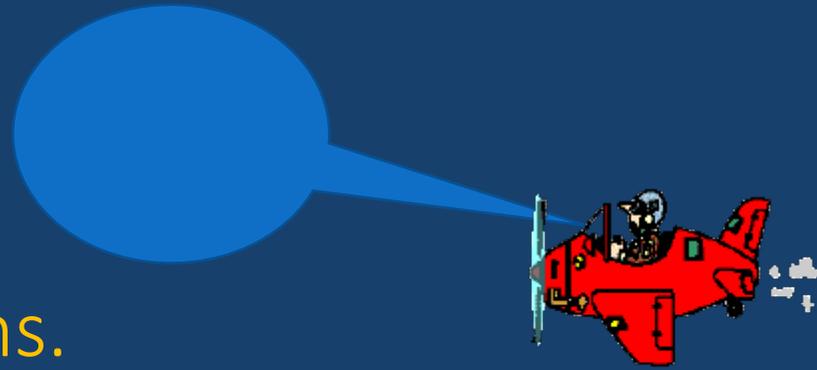
§91.183 IFR Communications.

- PIC must maintain a continuous watch (listen) on ATC frequency.
- Must report the following ASAP:

Time and altitude of passing reporting point (except under radar)

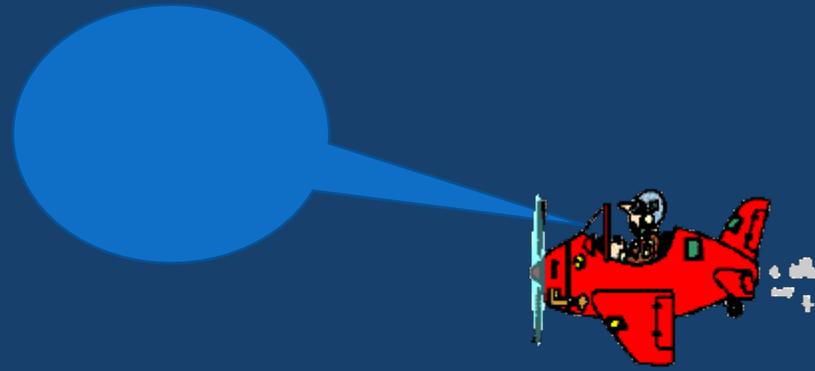
Unforecast weather conditions

Any other info relating to safety of flight.

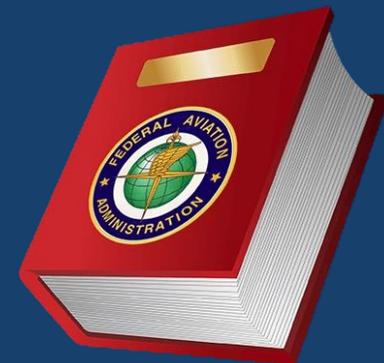


Communications

Mandatory Reports

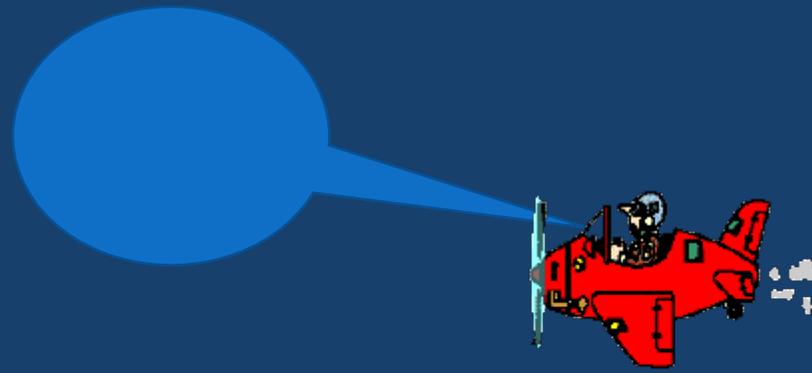


- Equipment malfunction – navigation or communication. (FAR 91.187)
- Intent to use afterburners during climb. (AIM 4-4-10.h)
- When vacating a previously assigned altitude. (AIM 5-3-3.a.1)
- Altitude change when VFR-On-Top. (AIM 5-3-3.a.1)



Communications

Mandatory Reports

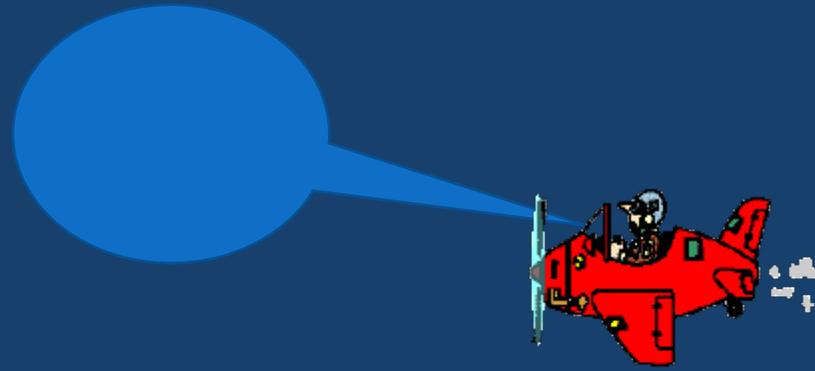


- Unable to climb/descend at least 500 FPM. (AIM 5-3-3.a.1)
- On missed approach. (AIM 5-3-3.a.1)
- TAS change greater than 5% or 10 kts (whichever is greater) than filed. (AIM 5-3-3.a.1)
- Time & altitude upon reaching a holding fix or clearance limit. (AIM 5-3-3.a.1)



Communications

Mandatory Reports



- When leaving any assigned holding fix. (AIM 5-3-3.a.1)
- Any loss of navigational receiver capability. (AIM 5-3-3.a.1)
- Any information relating to the safety of flight. (AIM 5-3-3.a.1)
- When not in radar contact:
 - Leaving FAF inbound on approach.
 - New ETA when 2 minutes off.

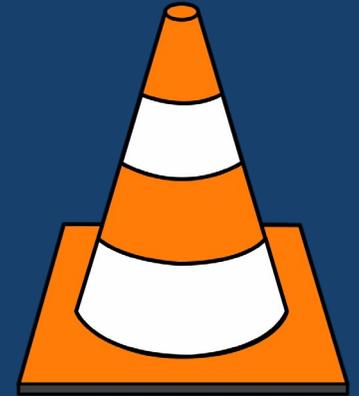


Communications

Climb/Descend Via

Under Construction

Link to Q & A on www.CaptainSchiff.com/Clearance



Communications

Frequency Change AIM 5-3-1.b



On initial contact with new controller:

Assigned altitude preceded by:

“level” or “climbing/descending to”

Altitude leaving (nearest 100’)

If not in radar contact:

Present position

Altitude

ETE to next reporting point



Communications

CPDLC

Controller - Pilot Data Link Communications:

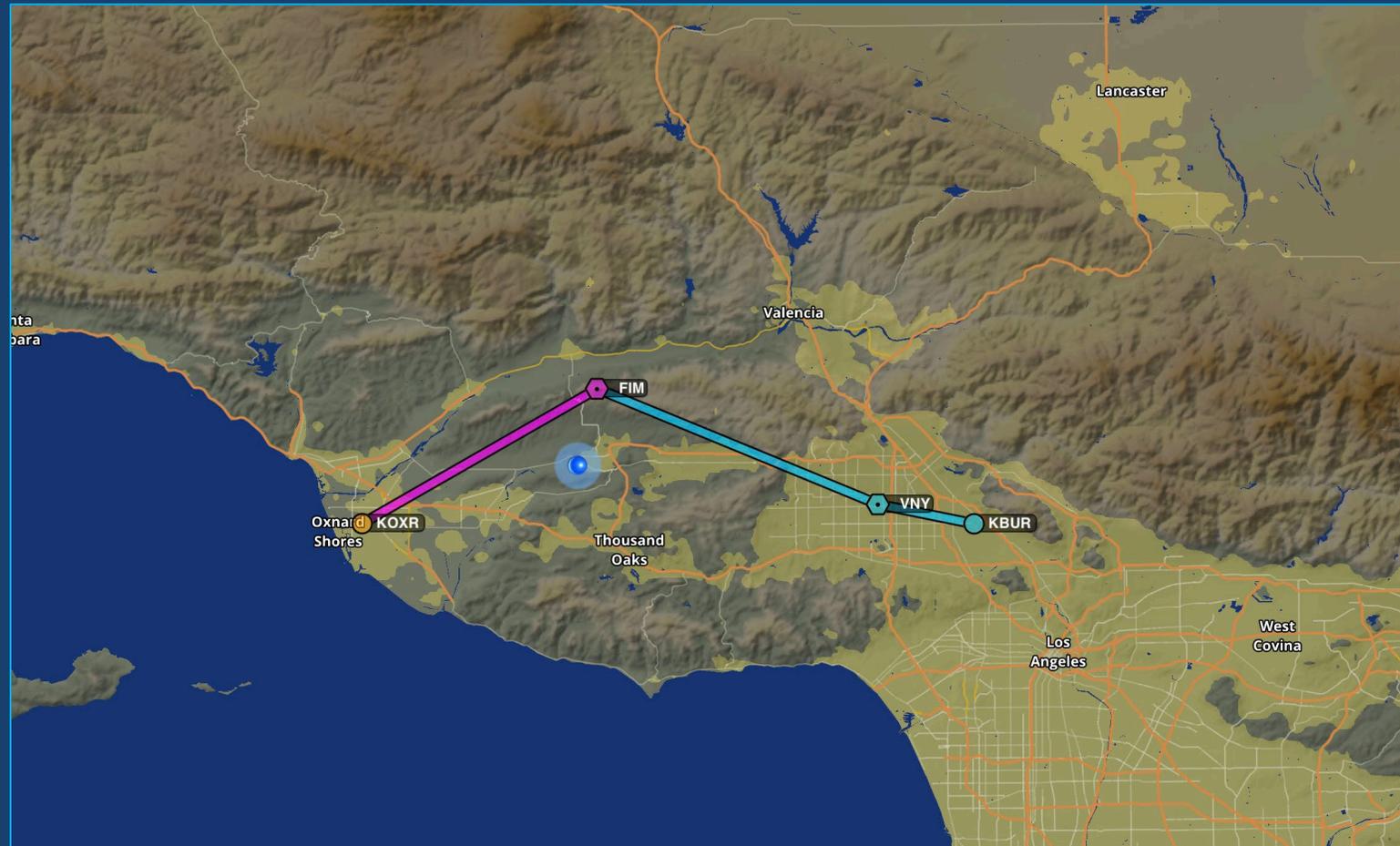
- Text messaging between pilots & ATC
- Reduce communication time
- Improves re-routing
- Reduces communication errors



Communications

KOXR-FIM-VNY-KBUR

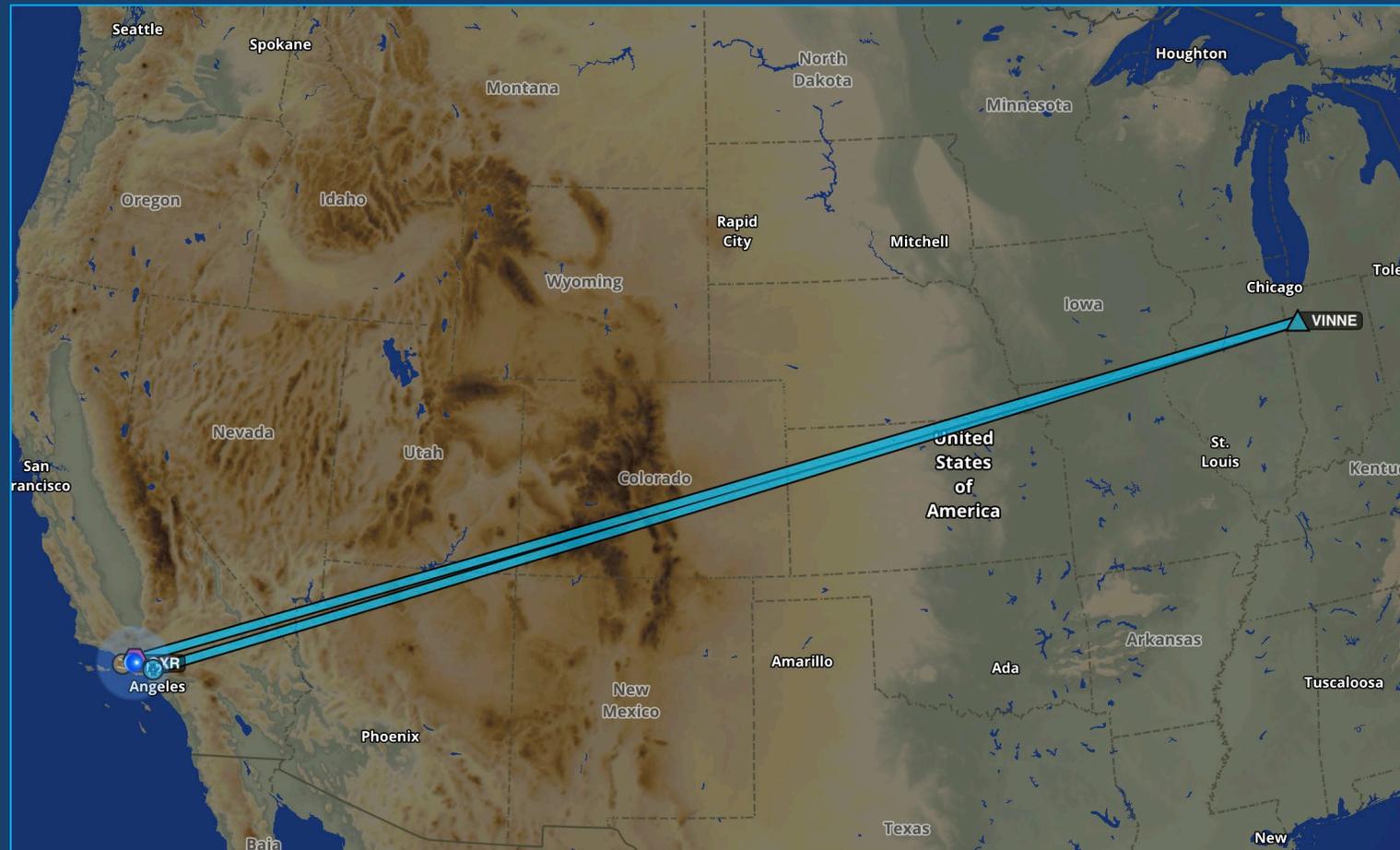
A Tale of Two Vinnys



Communications

KOXR-FIM-VINNE-KBUR

A Tale of Two Vinnys



Communications

Pilot-Controller Glossary

Important resource

Homework: Study this!

Bold terms:

ULTRALIGHT VEHICLE– A single-occupant aeronautical vehicle operated for sport or recreational purposes which does not require FAA registration, an airworthiness certificate, nor pilot certification. Operation of an ultralight vehicle in certain airspace requires authorization from ATC

(Refer to 14 CFR Part 103.)

UNABLE– Indicates inability to comply with a specific instruction, request, or clearance.

UNASSOCIATED– A radar target that does not display a data block with flight identification and altitude information.

(See ASSOCIATED.)

UNDER THE HOOD– Indicates that the pilot is using a hood to restrict visibility outside the cockpit while simulating instrument flight. An appropriately rated pilot is required in the other control seat while this operation is being conducted.

(Refer to 14 CFR Part 91.)



Clearance Adherence & Loss of Comm.

Plan

Clearance Adherence

Communications

Loss of Communications



Clearance Adherence & Loss of Comm.

Plan

Loss of Communications





Loss of Communications



There I was....

In IMC



2,181'
N118HQ



2,375'
RPAB550

4,100'
SKW5108

Loss of Two-Way Radio Communications

FAR 91.185

Schiffs-Notes:

www.SchiffsNotes.com

SCHIFF'S NOTES

IFR – LOSS OF COMMUNICATIONS

FAR 91.185: IFR Two-way radio communications failure

IF VMC: If loss of comm occurs during VFR or VFR conditions are encountered afterwards—maintain VFR and land as soon as practicable.

IF IMC: If loss of comm occurs during IFR or VFR conditions cannot be maintained:

ROUTE—in order of priority:

1. Last route assigned by ATC
2. Route ATC has advised to expect
3. Route filed in flight plan
4. If being vectored—direct to fix, route, or airway specified in the vector clearance

ALTITUDE—fly the highest of the following for the segment being flown:

1. Altitude last assigned
2. MEA for the route segment
3. Altitude ATC said may be expected

LEAVE CLEARANCE LIMIT—

1. If clearance limit is an IAF, commence approach as close as possible to filed or amended ETA
2. If clearance limit is not an IAF, then leave clearance limit at EFC time (if no EFC time then leave clearance limit immediately) and proceed to an IAF and commence approach as close as possible to ETA

Cockpit Checks:

1. Check speaker/headphones
2. Try different microphone
3. Check circuit breakers
4. Monitor nav aids being used
5. Try another radio
6. Try another frequency
7. Check audio panel

If loss of two-way radio communications is confirmed—

1. Squawk 7600

Note: If it's possible that the problem lies only in radio reception or audio, continue to broadcast your intentions on the in the blind on the appropriate frequency.

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1



IFR Loss of Two-Way Radio Communications

FAR 91.185

IF VMC:

Stay in VMC. Land VFR.



IFR Loss of Two-Way Radio Communications

FAR 91.185

IF IMC:

If VFR conditions cannot be maintained:

1. Route
2. Altitude
3. Leave Clearance Limit



IFR Loss of Two-Way Radio Communications

FAR 91.185

Route – In order of priority:

1. Last route assigned by ATC
2. Route ATC has advised to expect
3. Route filed in flight plan
4. If being vectored—direct to fix, route, or airway specified in the vector clearance



IFR Loss of Two-Way Radio Communications

FAR 91.185

Altitude – highest of following for segment being flown:

1. Altitude last assigned
2. MEA for the route segment
3. Altitude ATC said to expect



IFR Loss of Two-Way Radio Communications

FAR 91.185

Leave Clearance Limit:

1. If IAF, commence approach as close as possible to filed or amended ETA. $\text{Dep Time} + \text{ETE} = \text{ETA}$
2. If not IAF, leave clearance limit at EFC time.
3. If no EFC time, leave clearance limit immediately and proceed to an IAF and commence approach as close as possible to ETA.



Loss of Two-Way Radio Communications

Cockpit Checks

1. Try another radio
2. Try alternate frequency (or 121.5)
3. Check speaker/headphones
4. Try different microphone
5. Check circuit breakers
6. Monitor nav aids being used
7. Check audio panel (funny story...)



Loss of Two-Way Radio Communications

Cockpit Checks

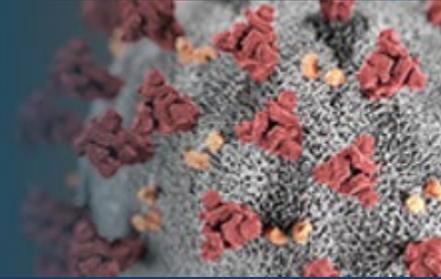
If loss of two-way communications confirmed:

1. Squawk 7600



ATC Zero

FAA Facilities Affected by COVID-19



- <https://www.faa.gov/coronavirus/map/>



Clearance Adherence & Loss of Comm.

The end.

All documents and websites can be found here:

www.CaptainSchiff.com/Clearance

For WINGS credit: Mention WP05103467 in an email to:

CapnMikeFAAST@gmail.com

(note: 2 "A"s in FAAST)