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SNA needs to know each block of the DD-175

-Ensure that they are using the General Planning when filling out the DD-175

T/D Code per the General Planning 4-6

Item (3) AIRCRAFT DESIGNATION AND TD CODES

a. AIRCRAFT DESIGNATION - Enter the military designation of the aircraft. In formation flights of the same type aircraft, enter the number of aircraft in the flight and the designation (e.g., 4/F4 or 6/UH1). In formation flights of mixed type aircraft, enter the lead aircraft and identify the other type aircraft in the REMARKS (e.g., for an F15 and an F16 in formation, the DESIGNATION block entry is "2/F15/P" ("P" is the TD code) and the REMARKS would contain the entry "#2 aircraft is an F16/P").

b. When the allowable gross weight of the aircraft is 255,000 pounds or more, enter the symbol "H/" as a prefix to the aircraft designation (e.g., "H/B52" or "H/C5"). When equipped with TCAS enter the prefix "T" (T/C26), and if both "H" and "T" enter "B" for both (B/C17).

c. TD code - Select the code from the following graph below which denotes the transponder/Navigational Aid capability of the aircraft:

One of the following suffixes will be added to aircraft designation to denote Transponder/Navigational Aids available.	Transponder Only	Area Nav Equipment	TACAN Only	DME
No Transponder		Y	M	D
Transponder W/No Mode C	T	C	N	B
Transponder W/Mode C	U	I	P	A

/G Global Positioning System (GPS)/Global Navigation Satellite System (GNSS) equipped aircraft with enroute, terminal, and GPS approach capability.

Types of flight Plan per the General Planning 4-11

Item (4) TYPE FLIGHT PLAN- Enter "I" (IFR) or "V" (VFR) as appropriate for that segment. Do not combine IFR and VFR route segments on the same line. Enter "D" (DVFR) for VFR flights conducted in the accordance with Air Defense Identification Zone procedures in the appropriate Enroute Supplement.

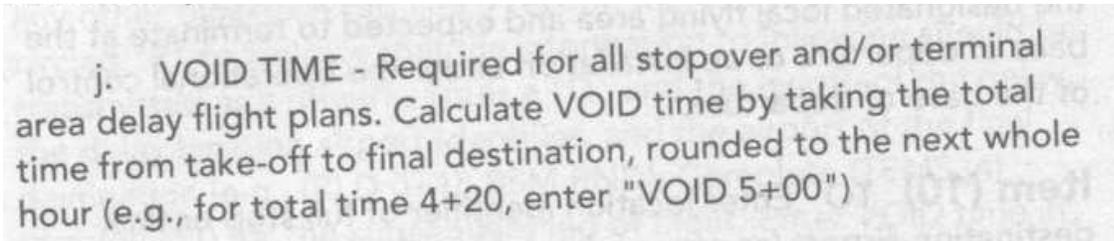
Filing Altitudes:

Semi-circular rules:

IFR within controlled airspace as assigned by ATC. IFR outside controlled airspace semi-circular rules apply.

VFR above 3000' AGL unless otherwise authorized by ATC, semi-circular rules apply.

Void Time:



j. VOID TIME - Required for all stopover and/or terminal area delay flight plans. Calculate VOID time by taking the total time from take-off to final destination, rounded to the next whole hour (e.g., for total time 4+20, enter "VOID 5+00")

This is for administrative purposes only. It has nothing to do with SAR.

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Lost Communications:

5. TWO-WAY RADIO FAILURE

a. FAA PROCEDURES

(AIM, FAR 91.185)

(1) IFR FLIGHT PLAN

(a) During two-way radio communications failure, when confronted with a situation not covered in the regulation, pilots are expected to exercise good judgment in whatever action they elect to take. Should the situation so dictate, they should not be reluctant to use the emergency actions contained in flying regulations.

(b) In areas of FAA jurisdiction, should the pilot of an aircraft equipped with a coded radar beacon transponder experience a loss of two-way radio capability, the transponder should be adjusted to reply on Mode 3/A, Code 7600.

(c) Pilots can expect ATC to attempt to communicate by transmitting on guard frequencies and available frequencies of navaids.

(d) VMC - If able to maintain flight in VMC continue flight under VFR and land as soon as practicable and notify ATC. It is not intended that the requirement to "land as soon as practicable" be construed to mean "as soon as possible". The pilot retains his prerogative of exercising his best judgment and is not required to land at an unauthorized airport, at an airport unsuitable for the type of aircraft flown, or to land only minutes short of his intended destination. The primary objective of this provision is to preclude extended IFR operations in the air traffic control system in VMC. When operating "on top" and unable to descend VMC prior to destination, the procedures contained in paragraph (e) below apply.

(e) IMC - If VMC is not encountered, continue the flight according to the following:

1. ROUTE

(FAR 91.185)

a. By the route assigned in the last ATC clearance received;

b. If being radar vectored, by the direct route from the point of radio failure to the fix, route, or airway specified in the vector clearance;

c. In the absence of an assigned route, by the route that ATC has advised may be expected in a further clearance; or

d. In the absence of an assigned route or a route that ATC has advised may be expected in a further clearance, by the route filed in the flight plan.

2. ALTITUDE - At the highest of the following altitudes or flight levels for the route segment being flown:

- a. The altitude or flight level assigned in the last ATC clearance received;
- b. The minimum altitude (converted, if appropriate, to minimum flight level) for IFR operations (see Section B, Altimeter Changeover Procedures); or
- c. The altitude or flight level ATC has advised may be expected in a further clearance.

NOTE - The intent of the rule is that a pilot who has experienced two-way radio failure should select the appropriate altitude for the particular route segment being flown and make the necessary altitude adjustments for subsequent route segments. If the pilot received an "expect further clearance" containing a higher altitude to expect at a specified time or fix, maintain the highest of the following altitudes until that time/fix:

- (1) the last assigned altitude, or
- (2) the minimum altitude/flight level for IFR operations.

Upon reaching the time/fix specified, the pilot should commence climbing to the altitude advised to expect. If the radio failure occurs after the time/fix specified, the altitude to be expected is not applicable and the pilot should maintain an altitude consistent with a. or b. above.

If the pilot receives an "expect further clearance" containing a lower altitude, the pilot should maintain the highest of 1 or 2 above until that time/fix specified in paragraph 3. LEAVE CLEARANCE LIMIT, below.

3. LEAVE CLEARANCE LIMIT.

a. When the clearance limit is a fix from which an approach begins, commence descent or descent and approach as close as possible to the expect further clearance time if one has been received, or if one has not been received, as close as possible to the expected time of arrival as calculated from the filed or amended (with ATC) estimated time enroute.

b. If the clearance limit is not a fix from which an approach begins, leave the clearance limit at the expect further clearance time if one has been received, or if none has been received, upon arrival over the clearance limit, and proceed to a fix from which an approach begins and commence descent or descent and approach as close as possible to the estimated time of arrival as calculated from the filed or amended (with ATC) estimated time enroute.

4. RADAR APPROACHES - initiate lost communications procedures if no transmissions are received for approximately one minute while being vectored to final, 15 seconds while on ASR final approach, or five seconds while on PAR final approach.

(AIM 51-37, FAA 7110.65)

a. Attempt contact on a secondary frequency, the previously assigned frequency, the tower frequency, or guard.

b. If unable to re-establish communications and unable to maintain VMC, proceed with a published instrument approach procedure or previously coordinated instructions. Change transponder to appropriate codes.

c. Maintain the last assigned altitude or the minimum safe/sector altitude (emergency safe altitude if more than 25 NM from the facility), whichever is higher, until established on a segment of the published approach.

Give the SNA a scenario, to help ensure they have a working knowledge of the lost comm. procedures.

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Fuel Planning: OPNAV 3710.7S

4.6.5 Minimum Fuel Requirements

4.6.5.1 Fuel Planning. All aircraft shall carry sufficient usable fuel, considering all meteorological factors and mission requirements as computed below:

a. If alternate is not required, fuel to fly from take-off to destination airfield, plus a reserve of 10 per-cent of planned fuel requirements.

b. If alternate is required, fuel to fly from takeoff to the approach fix serving destination and thence to an alternate airfield, plus a reserve of 10 percent of planned fuel requirements.

c. In no case shall the planned fuel reserve after final landing at destination or alternate airfield, if one is required, be less than that needed for 20 minutes of flight, computed as follows:

(1) Reciprocating engine-driven aircraft. Compute fuel consumption based on maximum endurance operation at normal cruise altitudes.

(2) Turbine-powered fixed-wing/tilt-rotor aircraft. Compute fuel consumption based on maximum endurance operation at 10,000 feet.

(3) Turbine-powered helicopters. Compute fuel consumption based on operation at planned flight altitude.

d. Minimum fuel reserve requirements for specific model aircraft shall be contained in the appropriate NATOPS manual.

4.6.5.3 Delays. Any known or expected traffic delays shall be considered time en route when computing fuel reserves. If route or altitude assigned by air traffic control causes or will cause planned fuel reserves to be inadequate, the pilot shall inform ATC of the circumstances, and, if unable to obtain a satisfactory altitude or routing, alter destination accordingly.

Note: This is for planning purposes only! There is no requirement to be on deck with 19 Gallons.

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Alternate Requirements: Not only have the SNAs know the chart out of OPNAV 3710 but ensure you give them an alternate airfield and tell you what the weather has to be at that airfield.

DESTINATION WEATHER ETA plus and minus 1 hour	ALTERNATE WEATHER ETA plus and minus 1 hour		
0 — 0 up to but not including published minimums	3,000 — 3 or better		
Published minimums up to but not including 3,000 — 3 (single-piloted absolute minimums 200 — 1/2)	NON- PRECISION	PRECISION	
		ILS	PAR
	*Published minimums plus 300-1	Published minimums plus 200-1/2	*Published minimums plus 200-1/2
3,000 — 3 or better	No alternate required		
*In the case of single-piloted or other aircraft with only one operable UHF/VHF transceiver, radar approach minimums may not be used as the basis for selection of an alternate airfield.			

Figure 4-1. IFR Filing Criteria

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NOTAMS (AIM 5-1-3)

5-1-3. Notices to Airmen (NOTAM) System

a. Time-critical aeronautical information which is of either a temporary nature or not sufficiently known in advance to permit publication on aeronautical charts or in other operational publications receives immediate dissemination via the National NOTAM System.

NOTE-

1. *NOTAM information is that aeronautical information that could affect a pilot's decision to make a flight. It includes such information as airport or primary runway closures, changes in the status of navigational aids, ILS's, radar service availability, and other information essential to planned en route, terminal, or landing operations.*

2. *NOTAM information is transmitted using standard contractions to reduce transmission time. See TBL 5-1-1 for a listing of the most commonly used contractions.*

b. NOTAM information is classified into three categories. These are NOTAM (D) or distant, NOTAM (L) or local, and Flight Data Center (FDC) NOTAM's.

1. **NOTAM (D)** information is disseminated for all navigational facilities that are part of the National Airspace System (NAS), all public use airports, seaplane bases, and heliports listed in the Airport/Facility Directory (AFD). The complete file of all NOTAM (D) information is maintained in a computer database at the Weather Message Switching Center (WMSC), located in Atlanta, Georgia. This category of information is distributed automatically via Service A telecommunications system. Air traffic facilities, primarily FSS's, with Service A capability have access to the entire WMSC database of NOTAM's. These NOTAM's remain available via Service A for the duration of their validity or until published. Once published, the NOTAM data is deleted from the system.

2. NOTAM (L)

(a) NOTAM (L) information includes such data as taxiway closures, personnel and equipment near or crossing runways, airport rotating beacon outages and airport lighting aids that do not affect instrument approach criteria, such as VASI.

(b) NOTAM (L) information is distributed locally only and is not attached to the hourly weather reports. A separate file of local NOTAM's is maintained at each FSS for facilities in their area only. NOTAM (L) information for other FSS areas must be specifically requested directly from the FSS that has responsibility for the airport concerned.

3. FDC NOTAM's

(a) On those occasions when it becomes necessary to disseminate information which is regulatory in nature, the National Flight Data Center (NFDC), in Washington, DC, will issue an FDC NOTAM. FDC NOTAM's contain such things as amendments to published IAP's and other current aeronautical charts. They are also used to advertise temporary flight restrictions caused by such things as natural disasters or large-scale public events that may generate a congestion of air traffic over a site.

(b) FDC NOTAM's are transmitted via Service A only once and are kept on file at the FSS until published or canceled. FSS's are responsible for maintaining a file of current, unpublished FDC NOTAM's concerning conditions within 400 miles of their facilities. FDC information concerning conditions that are more than 400 miles from the FSS, or that is already published, is given to a pilot only on request.

(GP 2-1)

NOTICE TO AIRMEN/NOTAM (P/CG) - A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition or change in any component (facility, service, or procedure of, or hazard in the National Airspace System) the timely knowledge of which is essential to personnel concerned with flight Operations.

(1) NOTAM(D) - A NOTAM given (in addition to local dissemination) distant dissemination beyond the area of responsibility of the Flight Service Station. These NOTAMs will be stored and available until cancelled.

(2) NOTAM(L) - A NOTAM given local dissemination by voice and other means, such as, teleautograph, and telephone, to satisfy local user requirements.

(3) FDC NOTAM - A NOTAM regulatory in nature, transmitted by USNOF and given system wide dissemination.

NOTICE TO AIRMEN/NOTAM (JCS, NATO, ICAO) - A notice containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight Operations.

Class I Distribution. Distribution by means of telecommunication.

Class II Distribution. Distribution by means other than telecommunications.

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WEATHER

a. The NWS issues inflight weather advisories designated as Severe Weather Forecast Alerts (AWW's), Convective SIGMET's (WST's), SIGMET's (WS's), Center Weather Advisories (CWA's), and AIRMET's (WA's). Inflight advisories serve to notify en route pilots of the possibility of encountering hazardous flying conditions which may not have been forecast at the time of the preflight briefing. Whether or not the condition described is potentially hazardous to a particular flight is for the pilot and/or aircraft dispatcher in a 14 CFR Part 121 operation to evaluate on the basis of experience and the operational limits of the aircraft. Inflight weather advisories in the contiguous U.S. are described and plotted primarily using high altitude VOR's as reference points. In Alaska and Hawaii, advisories are described and plotted using either geographic references or latitude/longitude coordinates.

b. Severe Weather Forecast Alerts (AWW's) are preliminary messages issued in order to alert users that a Severe Weather Bulletin (WW) is being issued. These messages define areas of possible severe thunderstorms or tornado activity. The messages are unscheduled and issued as required by the Aviation Weather Center at Kansas City, Missouri.

1. Each AWW is numbered sequentially beginning January 1 of each year.

EXAMPLE-

MKC AWW 161755

WW 279 SEVERE TSTM NY PA NJ

161830Z-170000Z

*AXIS..70 STATUTE MILES EITHER SIDE OF LINE..10W
KMSS TO 20E KABE..AVIATION COORDS..60NM
EITHER SIDE/60NW KSLK - 35W KEWR..HAIL
SURFACE AND ALOFT..2 INCHES. SURFACE WIND
GUSTS..65 KNOTS. MAX TOPS TO 540. MEAN WIND
VECTOR 19020.*

REPLACES WW 278..OH PA NY

2. Status reports are issued as needed on Severe Weather Watch Bulletins to show progress of storms and to delineate areas no longer under the threat of severe storm activity. Cancellation bulletins are issued when it becomes evident that no severe weather will develop or that storms have subsided and are no longer severe.

c. Convective SIGMET's (WST's) in the Conterminous U.S.: WST's concern only thunderstorms and related phenomena (tornadoes, heavy precipitation, hail, and high surface winds) over the conterminous U.S. and imply the associated occurrence of turbulence, icing, and convective low level wind shear. Individual WST's for each day are numbered sequentially (00-1-99), beginning at 00Z. The affected geographic area is contained in the number; i.e., the first WST issued each day in the eastern U.S. is Convective SIGMET 1E, the second is Convective SIGMET 2E, and so forth. WST's are issued on a scheduled basis, hourly at 55 minutes past the hour (H+55), and are valid for two hours or until superseded by the next hourly update. WST's are issued for any of the following phenomena:

1. Severe thunderstorm due to:
 - (a) Surface winds greater than or equal to 50 knots.
 - (b) Hail at the surface greater than or equal to $\frac{3}{4}$ inches in diameter.
 - (c) Tornadoes.
2. Embedded thunderstorms.
3. A line of thunderstorms.
4. Thunderstorms greater than or equal to VIP level 4 affecting 40% or more of an area at least 3,000 square miles.

REFERENCE-

Pilot/Controller Glossary Term- Radar Weather Echo Intensity Levels.

e. SIGMET's (WS's) within the conterminous U.S. are issued by the Aviation Weather Center (AWC) when the following phenomena occur or are expected to occur:

1. Severe or extreme turbulence or clear air turbulence (CAT) not associated with thunderstorms.
2. Severe icing not associated with thunderstorms.
3. Duststorms, sandstorms, or volcanic ash lowering surface or inflight visibilities to below three miles.
4. Volcanic eruption.

f. Volcanic eruption SIGMET's are identified by an alphanumeric designator which consists of an alphabetic identifier and issuance number. The first time an advisory is issued for a phenomenon associated with a particular weather system, it will be given the next alphabetic designator in the series and will be numbered as the first for that designator. Subsequent advisories will retain the same alphabetic designator until the phenomenon ends. In the conterminous U.S., this means that a phenomenon that is assigned an alphabetic designator in one area will retain that designator as it moves within the area or into one or more other areas. Issuances for the same phenomenon will be sequentially numbered, using the same alphabetic designator until the phenomenon no longer exists. Alphabetic designators NOVEMBER through YANKEE, except SIERRA and TANGO are only used for SIGMET's, while designators SIERRA, TANGO and ZULU are used for AIRMET's.

h. AIRMET's (WA's) may be of significance to any pilot or aircraft operator and are issued for all domestic airspace. They are of particular concern to operators and pilots of aircraft sensitive to the phenomena described and to pilots without instrument ratings and are issued by the AWC for the following weather phenomena which are potentially hazardous to aircraft:

1. Moderate icing.
2. Moderate turbulence.
3. Sustained winds of 30 knots or more at the surface.
4. Widespread area of ceilings less than 1,000 feet and/or visibility less than three miles.
5. Extensive mountain obscurement.

i. AIRMET's are issued on a scheduled basis every six hours, with unscheduled amendments issued as required. AIRMET's have fixed alphanumeric designator with ZULU for icing and freezing level data, TANGO for turbulence, strong surface winds, and wind shear, and SIERRA for instrument flight rules and mountain obscuration.

OPNAV 3710.7S STATES:

4.6.4.5 Severe Weather Watch Bulletins. The National Weather Service Storm Prediction Center issues unscheduled Weather Watch (WW) bulletins as graphical advisories for the Continental United States whenever a high probability exists for severe weather. The Air Force also issues scheduled Military Weather Advisories (MWA) in graphical form for the same geographic areas. Both provide estimates of the potential for convective activity for a specific time period, will be provided to pilots or certified crewmembers upon request, and are included with all briefings. An Air Force MWA does not constitute a Storm Prediction Center WW. Except for operational necessity, emergencies, and flights involving all-weather research projects or weather reconnaissance, pilots shall not file into or through areas for which the Storm Prediction Center has issued a WW unless one of the following exceptions apply:

a. Storm development has not progressed as forecast

for the planned route. In such situations:

(1) VFR filing is permitted if existing and forecast

weather for the planned route permits such flights.

(2) IFR flight may be permitted if aircraft radar is installed and operative, thus permitting detection

and avoidance of isolated thunderstorms.

(3) IFR flight is permissible in positive control areas if VMC can be maintained, thus enabling aircraft to detect and avoid isolated thunderstorms.

b. Performance characteristics of the aircraft permit an en route flight altitude above existing or developing severe storms.

Note

It is not the intent to restrict flights within areas encompassed by or adjacent to a WW area unless storms have actually developed as forecast.

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SIGNING THE DD 175

4.4.5 Signing the Flight Plan

4.4.5.1 Pilot in Command/Formation Leader.

Except when a daily flight schedule is used in lieu of a flight plan form, the pilots in command/formation leaders shall sign the flight plan for their flight. For multipiloted aircraft, the pilot in command/formation leader may choose to delegate this responsibility to a NATOPS qualified pilot/NFO. Regardless, the pilot in command/ formation leader is responsible for compliance with items a through h.

- The flight has been properly authorized.
- Adequate flight planning data, including NOTAM service, was available for complete and accurate planning.
- The flight will be conducted in accordance with governing directives and adherence to criteria for fuel requirements and weather minimums.
- Each pilot in a formation flight has received the required weather briefing.
- The pilot in command/each pilot in a formation flight possesses a valid instrument rating if any portion of the flight is to be conducted under IMC or in positive control areas or positive control route segments.
- Passengers have been properly briefed and manifested.
- Proper weight and balance forms, if applicable, have been filed.
- The pilot in command acknowledges responsibility for the safe and orderly conduct of the flight.

4.4.5.2 Daily Flight Schedule. A signature by the reporting custodian or other appropriate authority on the daily flight schedule, when used in lieu of a flight plan form, signifies that preceding items (a) through (h) shall be assured prior to flight.

4.4.5.3 Flight Plan Approval. The pilots in command of a naval aircraft or formation leaders are authorized to approve the flight plan for their pro-posed flight or modification thereof.

4.5 FLIGHT PLAN MODIFICATION

Modification of a written flight plan shall be accomplished only with the concurrence of the pilot in command.

4.3 FLIGHT PLANNING

4.3.1 Preflight Planning. Before commencing a flight, the pilot in command shall be familiar with all available information appropriate to the intended operation. Such information should include but is not limited to available weather reports and forecasts, NOTAMs, fuel requirements, terminal instrument procedures (to include proper use of non-DOD approaches), alternatives available if the flight cannot be completed as planned, and any anticipated traffic delays. In addition, the pilot in command and mission commander (when there is one designated) shall conduct a risk assessment prior to the flight

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Chart Trivia

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(IFR Enroute Low Altitude Chart)

(T) - Frequency protection usable range at 12,000 AGL – 25NM

HAWTHORNE - Name of Controlling FSS

R-2516/R2517 -Restricted Areas

[D]* -Airspace Class (* Part-time, or established by NOTAM)

L* -Lighting Available (* Part-time or on request)

ORCUT -MCA

└ -VOR Changeover Point

(Y) -TACAN must be placed in “Y” to receive distance info

(L) -Pilot controlled lighting

113.8 -(underline) No voice transmitted on this frequency

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----- -Refer to Los Angeles (Terminal Area) Chart

Mode C Veil

H -HIWAS

San Diego non-standard Class B

T TWEB

San Diego San -FSS Co-located

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122.1R -FSS Receive freq only

RIVERSIDE -Controlling FSS name

MCA on V264

Describe 29 Palms Airfield

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Minimum reception altitude

Compulsory reporting point

ARTCC/ADIZ/TIME ZONE BOUNDARY

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ABQ NAVAID Symbology

Albuquerque ARTCC Frequency

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Special Flight Rules Area

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Airspace Classes

Class A:

Dimensions: (FAR 71.33) 18,000 MSL up to and including FL 600, including the airspace overlying the waters within 12 nm of the coast of the 48 contiguous States and Alaska, and designated international airspace beyond 12 nm of the coast within areas of domestic radio navigational signal or ATC radar coverage, and within which domestic procedures are applied.

Aircraft Requirements: (FAR 91.135) ...must be equipped with a two-way radio capable of communicating with ATC on a frequency assigned by ATC.

Unless otherwise authorized by ATC, no person may operate an aircraft within class A airspace unless that aircraft is equipped with the applicable equipment specified in 91.215.

(FAR Part 91.215) ...equipped with an operable coded radar beacon transponder having either Mode 3/A 4096 Code capability...and that aircraft is equipped with automatic altitude reporting capability...

Pilot Requirements: (FAR 91.135) ...must conduct operation under instrument flight rules.

VFR Visibility and Cloud Clearances: (AIM 3-2-1) Not applicable. (IFR flight only)

Entry: (FAR 91.135) must be conducted under instrument flight rules. Operations may be conducted only under an ATC clearance received prior to entering the airspace.

Class B:

Dimensions: (AIM 3-2-3) Generally, the airspace from the surface to 10,000 feet MSL surrounding the nations busiest airports in terms of IFR operations or passenger emplanements. ...individually tailored and consists of a surface area and two or more layers and is designed to contain all published instrument procedures once an aircraft enters the airspace.

(AIM 3-2-3) Mode C Veil: The airspace within 30 nm of the airport from the surface upward to 10,000 ft MSL. Unless otherwise authorized, aircraft must have Mode C with automatic altitude reporting capability.

Aircraft Requirements: (FAR 91.131) For IFR ops: operable VOR or TACAN receiver.

For all ops: Operable two way radio capable of communications with ATC on appropriate frequencies. ...aircraft must be equipped with the applicable operating transponder and automatic altitude reporting equipment specified in 91.125.

(FAR Part 91.215) ...equipped with an operable coded radar beacon transponder having either Mode 3/A 4096 Code capability...and that aircraft is equipped with automatic altitude reporting capability...

Pilot Requirements: (FAR 91.131) ...pilot in command must hold a private pilot certificate.
...aircraft is operated by a student pilot or recreational pilot who seeks a private pilot certificate and has met the requirements of FAR 61.95.

VFR Visibility and Cloud Clearances: (AIM 3-2-1) Visibility: 3sm
Cloud clearance: Clear of Clouds

How to Enter: (91.131) The operator must receive an ATC clearance from the ATC facility having jurisdiction for that area before operating an aircraft in that area.

Class C:

Dimensions: (AIM 3-2-4) Generally, that airspace from the surface to 4,000 feet above the airport elevation surrounding those airports that have an operational control tower, are serviced by approach control...

...configuration of each Class C airspace area is individually tailored, the airspace usually consists of a 5 nm radius core surface area that extends from the surface up to 4000 feet above the airport elevation, and a 10 nm radius shelf area that extends from 1200 feet to 4000 feet above the airport elevation.

Outer area: The normal radius will be 20 NM, with some variations based on site specific requirements. The outer area extends outward from the primary airport and extends from the lower limits of radar/radio coverage up to the ceiling of the approach control's delegated airspace, excluding the Class C airspace and other airspace as appropriate.

Aircraft Requirements: (AIM 3-2-4) Two way radio and, unless otherwise authorized by ATC, and operable radar beacon transponder with automatic altitude reporting equipment.

Pilot Requirements: (AIM 3-2-4, FAR 91-130) No specific certification required.

VFR Visibility and Cloud Clearances: (AIM 3-2-1) Visibility: 3 sm
Cloud Clearance: 500 ft below
1000 ft above
2000 ft horizontal

How to enter: (FAR 91-130) Two way radio communication must be established with the ATC facility providing ATC services prior to entry and thereafter maintain those communications while in Class C airspace. (ATC responding positively with aircraft callsign is considered 2-way radio communication)

Class D:

Dimensions: (AIM 3-2-5) Generally, that airspace from the surface to 2500 feet above the airport elevation surrounding those airports that have an operational control tower. ... individually tailored and when instrument procedures are published, the airspace will normally be designed to contain the procedures.

Aircraft Requirements: (FAR Part 91.129) Operable Two-way radio.

Pilot Requirements: (AIM 3-2-5) No specific pilot requirements apply.

VFR Visibility and Cloud Clearances: (AIM 3-2-1) Visibility: 3sm
Cloud Clearance: 500 ft below
1000 ft above
2000ft horizontal

How to Enter: (AIM 3-2-5) Two way radio communication must be established with the ATC facility providing ATC services prior to entry and thereafter maintain those communications while in the Class D airspace. (ATC responding positively with aircraft callsign is considered 2-way radio communication)

Class E:

Dimensions: (AIM 3-2-5) Generally, if the airspace is not Class A, B, C, or D, and it is controlled airspace, it is Class E airspace. Types of Class E:

1. Surface area designated for an airport (configured to contain all instrument approaches.
2. Extension to a surface area: Serve as an extension to Class B, C, or D to provide controlled airspace to contain instrument approach procedures without imposing a communication requirement on VFR pilots.
3. Airspace used for transition : begins at either 700 or 1200 feet AGL used to transition to/from the terminal or en route environment.
4. En Route Domestic Areas: Extend upward from a specified altitude and provide controlled airspace in those areas where there is a requirement to provide IFR en route ATC services but the Federal Airway system is inadequate.
5. Federal Airways: Federal airways are Class E airspace and extend upward from 1200 ft (AGL) up to but not including 18,000 ft MSL.
6. Offshore Airspace: Extend upward from a specified altitude to, but not including, 18,000 ft MSL and are designated as offshore airspace areas. ...provide controlled airspace beyond 12 miles from the coast of the US in those areas where there is a requirement to provide IFR en route ATC services, and in which the US is applying domestic procedures.

7. Unless designated at a lower altitude, Class E airspace begins at 14,500 MSL to, but not including 18,000 MSL overlying: the 48 states and waters within 12 miles of the coast; District of Columbia; Alaska, including the waters within 12 miles of the coast, and the airspace above FL 600. Excluding the airspace below 1500 feet above the surface of the earth unless specifically so designated.

Aircraft Requirements: (AIM 3-2-6) No specific equipment required.

*(FAR Part 91.127) Unless otherwise authorized, no person may operate an aircraft to, from, through, or on any airport having an operational control tower unless two-way radio communications are maintained between the aircraft and the control tower. Communications must be established prior to 4 nm from the airport up to and including 2500 AGL

Pilot Requirements: (AIM 3-2-6) No specific certification required.

VFR Visibility and Cloud Clearances: (AIM 3-2-1)

Less than 10,000 ft MSL: Visibility: 3 sm
Cloud Clearances: 500 ft below
1000 ft above
2000 ft horizontal

At or above 10,000 ft MSL: Visibility: 5 sm
Cloud Clearances: 1000 ft below
1000 ft above
1 sm horizontal

How to Enter: (AIM 3-2-6) No specific requirements.

*(FAR Part 91.127) Unless otherwise authorized, no person may operate an aircraft to, from, through, or on any airport having an operational control tower unless two-way radio communications are maintained between the aircraft and the control tower. Communications must be established prior to 4 nm from the airport up to and including 2500 AGL.

Class G:

Dimensions: (AIM 3-3-1) Class G airspace (uncontrolled) is that portion of the airspace that has not been designated as Class A, B, C, D, or E.

Aircraft Requirements: None specified.

Pilot Requirements: None specified.

Cloud Clearances: (AIM 3-2-1)

1200 ft or less AGL (regardless of MSL)

Day: Visibility: 1 sm
Cloud Clearance: Clear of Clouds

Night: Visibility: 3 sm
Cloud Clearance: 500 ft below
1000 ft above
2000 ft horizontal

More than 1200 AGL (less than 10,000 MSL)

Day: Visibility: 1 sm
Cloud Clearance: 500 ft below
1000 ft above
2000 ft horizontal

Night: Visibility: 3 sm
Cloud Clearance: 500 ft below
1000 ft above
2000 ft horizontal

More than 1200 AGL (at or above 10,000 MSL)

Visibility: 5 sm
Cloud Clearance: 1000 ft below
1000 ft above
1 sm horizontal

How to Enter: (AIM 3-3-1) No specific requirements (VFR).

*(FAR Part 91.126) Unless otherwise authorized, no person may operate an aircraft to, from, through, or on any airport having an operational control tower unless two-way radio communications are maintained between the aircraft and the control tower. Communications must be established prior to 4 nm from the airport up to and including 2500 AGL.

Each pilot of a helicopter must avoid the flow of fixed-wing aircraft.

Slides 18-23:

Examples of class B-G airspace (23 is a TRSA).

Slide 24

* Indicates control tower (or ATIS, if designated) operates non-continuously, or non-standard pilot controlled lighting.

(L) To activate lights, use frequency indicated in the communication section of the chart.

AWOS-A reports only altimeter setting (FIH CH.3, para. 12)

Explain approach procedures from all IAF's

Explain notes

Explain non-standard take-off mins and Alternate mins

Slide 25

Feeder Route from DVC

Explain MSA Segments

Explain notes, alternate takeoff, and ANA

Slide 26

Glossary of terms:

Requirements for Initial Rating:

13.2 REQUIREMENT FOR INSTRUMENT RATINGS

13.2.1 Standard Rating. Minimum requirements for a standard instrument rating are as follows:

- a. Fifty hours of instrument pilot time under actual or simulated instrument conditions.
- b. Successfully complete a NATOPS instrument evaluation in accordance with the NATOPS Instrument Flight Manual.

c. Within the 6 months preceding the date of the instrument evaluation flight obtain:

(1) Six hours as pilot under actual or simulated instrument conditions

(2) Twelve final approaches under actual or simulated instrument conditions, six of which shall be precision approaches and six of which shall be nonprecision.

d. Within the 12 months preceding the date of the instrument evaluation flight:

(1) Twelve hours as pilot under actual or simulated instrument conditions

(2) A total of 18 final approaches under actual or simulated instrument conditions, 12 of which shall be precision and six of which shall be nonprecision.

e. Major flight simulator devices listed by CNO (N889F) may be utilized to meet one-half of the minimum instrument rating requirements.

f. CNATRA is authorized to issue an initial standard instrument pilot rating following successful completion of the naval air training command instrument training syllabus.

g. Renewal of an expired instrument rating for pilots returning to flying duty under provisions of paragraph 13.1.1.2 shall meet the requirements of paragraphs 13.2.1b and c.

Actual IMC:

Actual Instrument Conditions. Conditions external to the aircraft in flight that do not permit visual reference to the horizon.

Actual Instrument Approach:

Actual Instrument Approach. When actual instrument conditions are encountered below 1,000 feet above the airport/flight deck elevation during an instrument approach.

Instrument/Simulated Time:

Instrument Time. The portion of pilot time in either day or night under actual or simulated instrument conditions.

a. Actual instrument time will be logged by both pilots in a dual/multipiloted aircraft during flight in actual instrument conditions.

b. Simulated instrument time shall be logged only by the pilot actually manipulating the controls.

Simulated Instrument Approach:

Simulated Instrument Approach. An instrument approach flown under simulated instrument conditions.

Simulated Instrument Conditions:

Simulated Instrument Conditions. Conditions external to the aircraft in flight are visual meteorological conditions (VMC), but pilot vision is limited primarily to the interior of the aircraft.

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Annual Minimums:

13.1.2.2 Instrument Ground Training, Examination, and Flight Evaluation. Unless otherwise extended in accordance with this instruction, all naval aviators and NFOs in DIFOPS status shall annually:

a. Attend a formal TYCOM-approved instrument ground syllabus if one is available. This syllabus shall include:

- (1) Spatial disorientation review.
- (2) Use of non-DOD instrument approach/ departure procedures.

b. Satisfactorily complete a written examination covering the following subject areas:

- (1) Federal Aviation Regulations as they apply to flight under instrument conditions
- (2) Navigational systems and procedures, instrument approach procedures, and radio communication procedures
- (3) Meteorology, including the characteristics of air masses, fronts, thunderstorms, microbursts, and windshear; meteorological reports, elements of the DD-175-1, and pilot's responsibility for obtaining a thorough weather brief; and aviation severe weather hazards, to include pilot's responsibility to determine that the route of flight remains clear of aviation severe weather watch areas

(4) Instrument procedures contained in pertinent military directives.

Note

The written instrument examination shall be administered incident to the formal instrument ground training syllabus. When such a syllabus is not available, the command to which the pilot/NFO is assigned for flight shall be responsible for ensuring completion of an approved instrument examination prior to flight evaluation.

Additionally, naval aviators delineated in paragraph 13.1.1.1 shall:

c. Satisfactorily complete an instrument evaluation flight conducted by a designated military aviator or NFO (if authorized by individual aircraft NATOPS manual) in an aircraft or approved simulator. The conduct, content, and grading criteria of the flight shall be in accordance with the NATOPS Instrument Flight Manual.

Note

- The written examination must be completed with a grade of Qualified within 60 days prior to commencing the evaluation flight. The instrument evaluation flight may be combined with an aircraft NATOPS evaluation flight if all written examination requirements are satisfied prior to the flight.
- NFOs may at the discretion of their type commanders be required to complete an instrument flight evaluation. If an instrument flight evaluation is deemed necessary, it may be accomplished in conjunction with the NFO aircraft NATOPS evaluation flight. The written examination must be completed with a grade of Qualified prior to commencing the flight evaluation.

11.2.4 Annual Flying Requirements for Aeronautically Designated Officer Personnel

11.2.4.1 Minimum Flying Hours

a. To assure an acceptable minimum level of readiness and to enhance aviation safety, the following annual and semiannual minimum flying hours shall be accomplished.

NAVAL AVIATOR

Fiscal Year Minimum Flying Hours
(Less than 20 Years Aviation Service)

	Semiannual	Annual
Pilot Time	40	100
Night Time	6	12
Instrument Time	6	12

Note

- Pilot time includes time credited as first pilot and copilot. At least 50 percent of all the annual minimum pilot requirements must be gained through flying. Of that, 50 percent must be first pilot time. Copilot time may be credited toward the accomplishment of the remaining flying hour requirements. Special crew time does not count towards satisfaction of the annual pilot time requirements set forth in this instruction. Paragraph 11.6 discusses logging of simulator time.
- Instrument time requirements are applicable to both fiscal year and an individual's instrument rating requalification.
- For example, an individual must meet instrument flight minimums for both the

fiscal year (i.e., October through September) and, during the year, between the date of last instrument checkflight and subsequent instrument checkflight.

Authorized Airfields:

4.4 AUTHORIZED AIRFIELDS

4.4.1 Aircraft Operations

4.4.1.1 General. The intent of this section is to encourage the use of military airfields by Navy and Marine Corps aircraft unless a requirement exists to use a civil airfield. Pilots shall not be cleared for airfields other than those listed in the DOD Flip Enroute Supplement unless such flights are necessary for the accomplishment of a mission assigned by higher authority. The pilot in command is responsible for ensuring that airfield facilities, servicing, and security are adequate for the type of aircraft involved.

4.4.1.2 Exceptions. All naval aircraft operating in CONUS are prohibited from landing at or taking off from civil airfields listed in the DOD FLIP Enroute Supplement. Exceptions to this prohibition are as follows:

- a. Civil airfields on which military units operate aircraft.
- b. Flights requiring a weather alternate may use civil airfields when military airfields are not available.
- c. Flights that conduct official business at or near a civil airfield. Written orders are not required.
- d. Flights required for procurement, acceptance, modification, test, and delivery of aircraft. Ferry flights are included in this category to allow necessary flexibility to accomplish the ferry mission.
- e. Flights necessary for the accomplishment of a unit's mission, providing prior coordination has been effected with the civil airfield authorities and the TYCOM has granted waivers to permit the use of the airfield.
- f. Transport, turboprop training command aircraft, patrol class aircraft, and helicopters.
- g. Civil airfields may be used for instrument-approach and low-approach training.

Closed Airfields:

4.4.1.3 Closed Airfields. All naval aircraft are prohibited from taking off or landing at closed airfields except in the case of an emergency or under the following conditions. A takeoff and/or a landing may be conducted at a closed airfield when the tower and crash crew are unmanned with the authorization of the commanding officer of the airfield concerned and with the prior or concurrent approval of the aircraft's reporting custodian.

4.4.2 Helicopter, Tilt-Rotor, and VSTOL/STOL Landing Areas. Helicopter, tilt-rotor, and VSTOL/STOL aircraft are authorized to land at other than airfield locations (such as fields, highways, and parks), provided:

- a. A military requirement exists for such landing.
- b. Adequate safeguards are taken to permit safe landing and takeoff operations without hazard to people or property.
- c. There are no legal objections to landing at such nonairfield sites.

Note

COs are authorized to waive the provisions in items a through c when dispatched helicopter or VSTOL aircraft is engaged in SAR operations.

Fuel Purchase:

4.4.3 Fuel Purchase. Aircraft fuel and oil are made available to military users through military, Government contract, and commercial sources. There is no economical justification for pilots to purchase fuel/oil from commercial sources. The cost of such fuel is considerably higher than that purchased from either military or contract sources. Navy and Marine Corps flight personnel are not authorized to purchase aircraft fuel/oil from other than military or contract sources except under the following circumstances:

- a. Flight is classified as official business.
- b. Flight is terminated as a result of a bona fide emergency.
- c. Flight terminates at alternate airport in lieu of filed destination.
- d. Flight is made by aircraft with limited range and purchase of aircraft fuel or oil from other than military or contract (Government) sources is necessary to complete the assigned mission.

Flight Plans:

4.4.4 Flight Plans

4.4.4.1 General. A flight plan appropriate for the intended operation shall be submitted to the local air traffic control facility for all flights of naval aircraft except the following:

- a. Flights of operational necessity.
- b. Student training flights under the cognizance of CNATRA conducted within authorized training areas. CNATRA shall institute measures to provide adequate flight following service.

4.4.4.2 Forwarding Flight Plans to ARTCC/ Flight Service Station (FSS). Delivery of a properly prepared flightplan form to duty personnel at an established base operations office at the point of departure assures that the appropriate ARTCC/FSS will be furnished with:

- a. Essential elements of the flight plan as initially approved
- b. A takeoff report.

ted. Base operations shall specify the form desired in order that flight plan information may be passed to the appropriate ATCF/FSS.

e. The flight plan form specified by the local authorities shall be used for flights originating at points of departure outside the United States.

4.4.4.3 No Communication Link. If no communication link exists between the point of departure and the ARTCC/FSS, the pilot may relay the flight plan to an appropriate FSS by commercial telephone. When unable to file in person or by telephone, the flight plan may be filed as soon as possible by radio after takeoff. Flight in controlled airspace in IMC without ATC clearance is prohibited. Filing by radio after takeoff is not permitted when it will involve unauthorized IMC flight. In any case, the pilot's responsibility is not fulfilled until a completed flight plan and passenger manifest have been deposited with the airport manager or other suitable person.

4.6.4.2 IFR Flight Plans. Regardless of weather, IFR flight plans shall be filed and flown whenever practicable as a means of reducing midair collision potential. In any case, forecast meteorological conditions must meet the weather minimum criteria shown in Figure 4-1 for filing IFR flight plans and shall be based on the pilot's best judgment as to the runway that will be in use upon arrival. IFR flight plans may be filed for destination at which the forecasted weather is below the appropriate minimums provided a suitable alternate airfield is forecast to have at least 3,000-foot ceiling and 3-statute-mile visibility during the period 1 hour before ETA until 1 hour after ETA.

Flight Plan Forms:

4.4.4.5 Flight Plan Forms. The forms listed below are used to submit flight plans in the circumstances indicated:

- a. The DD 175, military flight plan, completed in accordance with FLIP General Planning, is used for other than local flights originating from airfields in the United States at which a military operations department is located (see FAR 91.153 and 91.169 for mandatory items). A daily schedule containing an approved stereo (ARTCC computer stored)/canned flight plan code may be used in lieu of a DD-175 for other than local flights provided the point of departure is a military facility and the stereo/canned flight plan conforms to agreements with the parent ARTCC.

b. A daily schedule or abbreviated single-copy DD-175 may be authorized by the approval authority for use when the flight will be conducted within the established local flying area and adjacent offshore operating/training areas provided that:

(1) Sufficient information relative to the flight is included to satisfy the needs of the local ATC/FSS facility that guards the flight.

(2) Facility operations maintain cognizance of each flight plan and are responsible for initiating any overdue action or issuing in-flight advisory messages as specified for handling point-to-point flight plan messages in accordance with FAA 7110.10. Termination of local flights at facilities other than the point of departure is authorized only in those cases where local flight plans may be closed out by direct station-to-station communication.

(3) Completed flight schedules are retained in operations files for 3 months.

(4) The flight shall not be conducted in IMC within controlled airspace except as jointly agreed to by the local naval command and the responsible air traffic control agency. When making such agreements, naval commands shall ensure that they do not conflict with policies and directives established by CNO.

(5) When an abbreviated DD-175 is utilized, items 1, 2, 3, 4, 6, 7, 9, 10, 11, 12, 20, 21, 24, and 25 of the flight plan (see FLIP general planning) shall be completed as a minimum. For VFR flights within the local flying area, the term "local" may be entered as "route of flight" (item 9). For day VFR and IFR flights that penetrate or operate within an ADIZ (unless an authorized exception — see FLIP (En Route) IFR Supplement), the estimated time and point of penetration(s) shall be entered in the "remarks" (item 12).

c. An FAA flight plan, FAA 7233-1, may be filed in lieu of a DD-175 at airfields in the United States at which a military operations department is not located.

d. An ICAO flight plan or military version thereof is used when applicable for flights conducted in international airspace in accordance with ICAO rules and procedures. For flights that originate in the United States and are conducted in accordance with ICAO rules and procedures, it is not intended that both an ICAO flight plan and DD-175 be submit-

ted. Base operations shall specify the form desired in order that flight plan information may be passed to the appropriate ATCF/FSS.

e. The flight plan form specified by the local authorities shall be used for flights originating at points of departure outside the United States.

4.4.5.2 Daily Flight Schedule. A signature by the reporting custodian or other appropriate authority on the daily flight schedule, when used in lieu of a flight plan form, signifies that preceding items (a) through (h) shall be assured prior to flight.

4.4.5.3 Flight Plan Approval. The pilots in command of a naval aircraft or formation leaders are authorized to approve the flight plan for their proposed flight or modification thereof.

Stopovers:

4.4.4.7 Stopover Flights Within the United States. NAs are authorized to utilize one DD 175 to plan flights involving en route stops, subject to compliance with the following procedures and limitations:

a. The flight plan (DD 175) shall be prepared in accordance with the applicable instructions contained in the DOD FLIP (planning).

b. NOTAM and weather briefing shall be obtained at point of origin for the entire route of flight. The weather information entered on the DD-175-1 shall clearly indicate the forecast weather (en route) for each leg of the flight, each destination, and each alternate (if required). Separate DD 175-1s may be

utilized for each leg. Pilots shall periodically determine that the intended route of flight remains clear of aviation severe weather watch (WW) bulletins and that weather forecasts for each successive intermediate destination (and alternates when required) continue to satisfy the minimums established in paragraph 4.6.4 or 5.2 as applicable.

- c. No change shall be made in the pilot in command.
- d. A corrected manifest shall be left with a responsible person at each intermediate base at which a change of passengers or crew occurs (see paragraph 4.6.2).
- e. Weight and balance must remain within limits (see paragraph 4.6.6).
- f. A revised flight plan *void* time shall be filed with Flight Service when appropriate.
- g. The pilot shall close out the balance of the original flight plan if the flight is terminated at an intermediate base.

Note

Stopover flights outside of the United States are governed by the procedures contained in the appropriate area FLIP (planning) publication.

WX BRIEFING

Sources:

4.6.3 Weather Briefing

4.6.3.1. General. Pilots are responsible for reviewing and being familiar with weather conditions for the area in which flight is contemplated. Where Naval Meteorology and Oceanography Command (NMOC) services are locally available, weather briefings shall be conducted by a qualified meteorological forecaster. They may be conducted in person or by telephone, autograph, or weathervision. FAA weather briefings obtained from FSS or DUAT services may be used as a supplement to NMOC service briefing. If NMOC services are not locally available, an FAA-approved weather briefing may be substituted.

4.6.3.2 Flight Weather Briefing Form. A DD 175-1, flight weather briefing, shall be completed for all flights to be conducted in IMC. The forecaster shall complete the form for briefings conducted in person and for autographic briefings. It is the pilot's responsibility to complete the form for telephonic or weathervision briefings. For VFR flights using the DD-175, the following certification on the flight plan may be used in lieu of a completed DD 175-1:

Note

Navy and Marine Corps forecasters are required to provide flight weather briefings (DD 175-1 briefs or VFR stamps) within 2 hours of ETD and to assign briefing void times that do not exceed ETD plus one-half hour.

BRIEFING VOID _____ Z, FLIGHT AS PLANNED CAN BE CONDUCTED UNDER VISUAL FLIGHT RULES. VERBAL BRIEFING GIVEN AND HAZARDS EXPLAINED. FOLLOWING SIGMETS ARE KNOWN TO BE CURRENTLY IN EFFECT ALONG PLANNED ROUTE OF FLIGHT.

(Signature of forecaster)

Note

If the intended VFR flight plan includes a mission (i.e., OLIVE BRANCH) or an airfield requiring VFR minimums higher than the basic 1,000-foot ceiling and 3-statute-mile visibility, it is the responsibility of the pilot to advise the weather briefer of these higher minimums.

4.6.3.3 Flight Weather Packet. A flight weather packet, including a horizontal weather depiction (HWD) chart, may be requested where Navy or Marine Corps weather services are available. Pilots should routinely allow a minimum of 2 hours for preparation of the packet. Pilots on extended flights, especially those on long overwater routes, are encouraged to avail themselves of that service. Items contained in the flight weather packet are set forth in OCEAN-COMINST 3140.14.

4.6.4 Weather Criteria for Filing. Flight plans shall be filed based on all the following:

- a. The actual weather at the point of departure at the time of clearance
- b. The existing and forecast weather for the entire route of flight
- c. Destination and alternate forecasts for a period 1 hour before ETA until 1 hour after ETA.

4.6.4.1 VFR Flight Plans. The pilot in command shall ascertain that actual and forecast weather meets the criteria specified in paragraph 5.2.4 prior to filing a VFR flight plan.

4.6.4.2 IFR Flight Plans. Regardless of weather, IFR flight plans shall be filed and flown whenever practicable as a means of reducing midair collision potential. In any case, forecast meteorological conditions must meet the weather minimum criteria shown in Figure 4-1 for filing IFR flight plans and shall be based on the pilot's best judgment as to the runway that will be in use upon arrival. IFR flight plans may be filed for destination at which the forecasted weather is below the appropriate minimums provided a suitable alternate airfield is forecast to have at least 3,000-foot ceiling and 3-statute-mile visibility during the period 1 hour before ETA until 1 hour after ETA.

WX Brief good for how long?

Note

Navy and Marine Corps forecasters are required to provide flight weather briefings (DD 175-1 briefs or VFR stamps) within 2 hours of ETD and to assign briefing void times that do not exceed ETD plus one-half hour.

WX Criteria for Filing:

4.6.4 Weather Criteria for Filing. Flight plans shall be filed based on all the following:

- a. The actual weather at the point of departure at the time of clearance
- b. The existing and forecast weather for the entire route of flight
- c. Destination and alternate forecasts for a period 1 hour before ETA until 1 hour after ETA.

4.6.4.1 VFR Flight Plans. The pilot in command shall ascertain that actual and forecast weather meets the criteria specified in paragraph 5.2.4 prior to filing a VFR flight plan.

4.6.4.2 IFR Flight Plans. Regardless of weather, IFR flight plans shall be filed and flown whenever practicable as a means of reducing midair collision potential. In any case, forecast meteorological conditions must meet the weather minimum criteria shown in Figure 4-1 for filing IFR flight plans and shall be based on the pilot's best judgment as to the runway that will be in use upon arrival. IFR flight plans may be filed for destination at which the forecasted weather is below the appropriate minimums provided a suitable alternate airfield is forecast to have at least 3,000-foot ceiling and 3-statute-mile visibility during the period 1 hour before ETA until 1 hour after ETA.

DESTINATION WEATHER ETA plus and minus 1 hour	ALTERNATE WEATHER ETA plus and minus 1 hour		
O — O up to but not including published minimums	3,000 — 3 or better		
Published minimums up to but not including 3,000 — 3 (single-piloted absolute minimums 200 — 1/2)	NON-PRECISION	PRECISION	
		ILS	PAR
	*Published minimums plus 300-1	Published minimums plus 200-1/2	*Published minimums plus 200-1/2
3,000 — 3 or better	No alternate required		
*In the case of single-piloted or other aircraft with only one operable UHF/VHF transceiver, radar approach minimums may not be used as the basis for selection of an alternate airfield.			

Figure 4-1. IFR Filing Criteria

5.2.4 Weather Minimums. Within airspace where FAR, Part 91, pertains, cloud clearance and visibility minimums shown in Figure 5-1 shall prevail throughout a VFR flight. In addition, ceiling and visibility minimums within Class B, C, D, or E surface areas must be at least 1,000 feet and 3 statute miles. If more stringent VFR minimums have been established for the point of departure or destination, as noted in the supplementary airport remarks section of the DOD FLIP AP/1, AP/2, AP/3, or AP/4 then ceiling and visibility must be at or above those minimums in the applicable Class B, C, D, or E surface area. Existing and forecast weather must be such as to permit VFR operations for the entire duration of the flight. Destination weather shall be at least 1,000-foot ceiling and 3-statute mile visibility (or such higher minimums as noted in the supplementary airport remarks section of the DOD FLIP AP/1, AP/2, AP/3, or AP/4) and forecast to remain at or above those minimums during the period 1 hour before ETA until 1 hour after ETA. Exceptions to the minimums are as follows:

- a. Deviations under FAR 91.157, Special VFR Weather Minimums, are permitted except at those airports where special VFR is not authorized in fixed-wing aircraft. For special VFR within controlled airspace, the pilot must obtain authorization from air

traffic control; ceiling must be a minimum of 500 feet; visibility must be a minimum of 1 statute mile; aircraft must remain clear of clouds, and the pilot and aircraft must be certified for instrument flight. Aviation commanding officers in the chain of command may authorize helicopter special VFR flights in conditions below 500 feet/1 mile for missions of operational necessity. The authority granted by this paragraph shall not be delegated.

b. Outside of controlled airspace, helicopters may be operated below 1,200 feet AGL, clear of clouds, when the visibility is less than 1 statute mile if operated at a speed that allows the pilot adequate opportunity to see and avoid other air traffic and maintain obstacle clearance.

Note

FLIP General Planning, Chapter 6 (International Rules and Procedures), outlines the general flight rules for operation of military aircraft in airspace where FAR 91 does not apply.

5.2.5 Weather Conditions Precluding VFR Flight. When weather conditions encountered en route preclude compliance with visual flight rules, the pilot in command shall take appropriate action as follows to:

- a. Alter route of flight so as to continue under VFR conditions or
- b. Remain in VFR conditions until a change of flight plan is filed and IFR clearance obtained or
- c. Remain in VFR conditions and land at a suitable alternate.

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Minimum Fuel Requirements:

4.6.5 Minimum Fuel Requirements

4.6.5.1 Fuel Planning. All aircraft shall carry sufficient usable fuel, considering all meteorological factors and mission requirements as computed below:

- a. If alternate is not required, fuel to fly from takeoff to destination airfield, plus a reserve of 10 percent of planned fuel requirements.
- b. If alternate is required, fuel to fly from takeoff to the approach fix serving destination and thence to an alternate airfield, plus a reserve of 10 percent of planned fuel requirements.
- c. In no case shall the planned fuel reserve after final landing at destination or alternate airfield, if one is required, be less than that needed for 20 minutes of flight, computed as follows:
 - (1) Reciprocating engine-driven aircraft — Compute fuel consumption based on maximum endurance operation at normal cruise altitudes.
 - (2) Turbine-powered fixed-wing/tilt-rotor aircraft — Compute fuel consumption based on maximum endurance operation at 10,000 feet.
 - (3) Turbine-powered helicopters — Compute fuel consumption based on operation at planned flight altitude.
- d. Minimum fuel reserve requirements for specific model aircraft shall be contained in the appropriate NATOPS manual.

4.6.5.3 Delays. Any known or expected traffic delays shall be considered “time en route” when computing fuel reserves. If route or altitude assigned by air traffic control causes or will cause planned fuel reserves to be inadequate, the pilot shall inform ATC of the circumstances, and, if unable to obtain a satisfactory altitude or routing, alter destination accordingly.

Closing of Flight Plan:

4.7 CLOSING OF FLIGHT PLAN

It is the responsibility of the pilot in command/formation leader to ensure that the proper agency is notified of flight termination.

4.7.1 Military Installations. At military installations, the pilot either shall verbally confirm the closing of the flight plan with tower or base operations personnel or deliver a copy of the flight plan form to base operations.

4.7.2 Nonmilitary Installations. At nonmilitary installations, the pilot shall close the flight plan with flight service through any means of communication available. Collect, long-distance telephone service may be used if required. When appropriate communication links are known or suspected not to exist at the point of intended landing, a predicted landing time in lieu of the actual landing shall be reported to an appropriate aeronautical facility while airborne.

Note

Cancellation of an instrument flight plan does not meet the requirement for "closing out" the flight plan. When a landing report has been properly delivered, the flight plan will be considered closed out.

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Takeoff Mins:

5.3.3 Instrument Departures

5.3.3.1 Takeoff Minimums

- a. Special instrument rating — No takeoff ceiling or visibility minimums apply. Takeoff shall depend on the judgment of the pilot and urgency of flights.
- b. Standard instrument rating — Published minimums for the available nonprecision approach, but not less than 300-foot ceiling and 1-statute mile visibility. When a precision approach compatible with installed and operable aircraft equipment is available, with published minimums less than 300/1, takeoff is authorized provided the weather is at least equal to the precision approach minimums for the landing runway in use, but in no case when the weather is less than 200-foot ceiling and 1/2-statute-mile visibility/ 2,400-foot runway visual range (RVR).

What Can Be Reduced on an Approach?/Copter Approach?:

5.3.4 Instrument Approaches and Landing Minimums

5.3.4.1 General. Approved instrument approach procedures for use at other than U.S. airports are published in DOD FLIPs (Terminal). For U.S. airports, approved instrument approach procedures are published in DOD FLIPs (Terminal) or other similar type publications. For straight-in approaches, pilots shall use RVR, if available, to determine if visibility meets the weather criteria for approaches, which are published in DOD FLIP Terminal Approach Procedures. Prevailing visibility shall be used for circling approach criteria. Helicopter-required visibility minimum may be reduced to one-half the published visibility minimum for Category A aircraft, but in no case may it be reduced to less than one-fourth mile or 1,200 feet RVR. Helicopter procedures visibility may not be reduced. Helicopter procedures and reduced Category A visibility recognize the unique maneuvering capability of the helicopter and are based on airspeeds not exceeding 90 knots on final approach.

VFR WX Mins/Special VFR:

5.2 VISUAL FLIGHT RULES PROCEDURES

5.2.1 Compliance With Directives. The pilot in command shall ascertain that the contemplated flight can be conducted in accordance with the visual flight requirements of FAR, other governing regulations, and flight rules set forth in this instruction. Visual meteorological conditions are the flight weather conditions that permit military aircraft operations under VFR. If weather conditions are not VMC, military aircraft operations must be either under special VFR or IFR (excluding special military operations).

5.2.2 Judgment. Although the choice of flight rules to be followed is normally dictated by weather and mission considerations, sound judgment plays a most important role. There are occasions when VFR may be legally followed by applying the appropriate visibility and cloud clearance criteria. That prerogative should be exercised with reasonable restraint. The established weather criteria are minimums. The pilot should allow a greater margin of safety when operational requirements permit, particularly in terminal areas or when reduced visibility or cloud conditions make flight under VFR questionable. Pilots shall file and retain an IFR clearance to the maximum extent practicable consistent with mission accomplishment.

5.2.3 See and Avoid. The see-and-avoid concept applies to visual flight conditions, thus eliminating the need for specific route clearance from ATC agencies under most circumstances. Since pilots are responsible for their own separation from other aircraft, conditions must exist that permit ample opportunity to see and avoid other air traffic and maintain obstruction clearance. The following measures shall serve as additional precautions when separation is maintained through the see-and-avoid concept, provided no degradation of the assigned mission will result.

- a. Excepting single-seat aircraft, electronic equipment such as airborne radar should be used where feasible.
- b. Where available, radar advisory service shall be requested especially when VFR flight is required through high-density traffic areas.

5.2.4 Weather Minimums. Within airspace where FAR, Part 91, pertains, cloud clearance and visibility minimums shown in Figure 5-1 shall prevail throughout a VFR flight. In addition, ceiling and visibility minimums within Class B, C, D, or E surface areas must be at least 1,000 feet and 3 statute miles. If more stringent VFR minimums have been established for the point of departure or destination, as noted in the supplementary airport remarks section of the DOD FLIP AP/1, AP/2, AP/3, or AP/4 then ceiling and visibility must be at or above those minimums in the applicable Class B, C, D, or E surface area. Existing and forecast weather must be such as to permit VFR operations for the entire duration of the flight. Destination weather shall be at least 1,000-foot ceiling and 3-statute mile visibility (or such higher minimums as noted in the supplementary airport remarks section of the DOD FLIP AP/1, AP/2, AP/3, or AP/4) and forecast to remain at or above those minimums during the period 1 hour before ETA until 1 hour after ETA. Exceptions to the minimums are as follows:

- a. Deviations under FAR 91.157, Special VFR Weather Minimums, are permitted except at those airports where special VFR is not authorized in fixed-wing aircraft. For special VFR within controlled airspace, the pilot must obtain authorization from air traffic control; ceiling must be a minimum of 500 feet; visibility must be a minimum of 1 statute mile; aircraft must remain clear of clouds, and the pilot and aircraft must be certified for instrument flight. Aviation commanding officers in the chain of command may authorize helicopter special VFR flights in conditions below 500 feet/1 mile for missions of operational necessity. The authority granted by this paragraph shall not be delegated.
- b. Outside of controlled airspace, helicopters may be operated below 1,200 feet AGL, clear of clouds, when the visibility is less than 1 statute mile if operated at a speed that allows the pilot adequate opportunity to see and avoid other air traffic and maintain obstacle clearance.

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Approach Criteria:

5.3.4.2 Approach Criteria for Multiplied Aircraft. When reported weather is at or below published landing minimums for the approach to be conducted, an approach shall not be commenced in multipiloted aircraft unless the aircraft has the capability to proceed to a suitable alternate in the event of a missed approach.

5.3.4.3 Approach Criteria for Single-Piloted Aircraft

a. An instrument approach shall not be commenced if the reported weather is below published minimums for the type approach being conducted. When a turbojet en route descent is to be executed, the approach is considered to commence when the aircraft descends below the highest initial penetration altitude established in high altitude instrument approach procedures for the destination airport. Once an approach has been commenced, pilots may, at their discretion, continue the approach to the approved published landing minimums as shown in the appropriate FLIP for the type approach being conducted. Absolute minimums for a single-piloted aircraft executing a precision approach are 200-foot ceiling/height above touchdown (HAT) and visibility 1/2-statute-mile/2,400 feet RVR or published minimums, whichever is higher.

b. Single-piloted aircraft that are configured for and assigned all-weather missions with side-by-side seating occupied by the pilot in command and an assisting NFO may operate within the same filing, clearance, and approach criteria specified above for multipiloted aircraft provided:

(1) The assisting NFO is instrument qualified in accordance with this instruction and NATOPS qualified in the model aircraft in which NFO duties are being performed.

(2) Cockpit configuration is such that the assisting NFO can:

(a) Monitor the pilot flight instruments

(b) Monitor and control communication

(c) Assist the pilot in acquiring the runway visually.

Continuing Approach to Landing:

5.3.4.4 Criteria for Continuing Instrument Approaches to a Landing. Pilots shall not descend below the prescribed minimum descent altitude (MDA) or continue an approach below the decision height (DH) unless they have the runway environment in sight and in their judgment a safe landing can be executed, either straight-in or from a circling approach, whichever is specified in their clearance.

a. Precision Approaches — A missed approach shall be executed immediately upon reaching the decision height unless the runway environment is in sight and a safe landing can be made. On precision radar approaches, the pilot may expect control instructions until over landing threshold; course and glidepath information given after decision height shall be considered advisory in nature.

b. Nonprecision Approaches — A missed approach shall be executed immediately upon reaching the missed approach point if visual reference is not established and/or a landing cannot be accomplished. If visual reference is lost while circling to land from a published instrument approach, the missed approach specified for that particular procedure must be followed. To become established on the prescribed missed approach course, the pilot should make an initial climbing turn toward the landing runway and continue the turn until he/she is established on the missed approach course.

Practice Approaches (WX Below Mins):

5.3.4.7 Practice Approaches. The provisions of this section are not intended to preclude a single-piloted aircraft from executing practice approaches (no landing intended) at a facility where weather is reported below published minimums when operating with an appropriate ATC clearance. The facility in question must not be filed destination or alternate and the weather at the filed destination and alternate must meet the filing criteria for an instrument clearance as set forth in this instruction.

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Required Voice Reports: (FIH CH.4)

At All Times :

1. When vacating any previously assigned altitude or flight level for a newly assigned altitude or flight level.
2. When an altitude change will be made if operating on a clearance specifying “VFR ON TOP”
3. When unable to climb/descend at a rate of at least 500 fpm.
4. When an approach has been missed (Request clearance for specific action, i.e., to alternative airport, another approach, etc.)
5. Change in the average true airspeed (at cruising altitude) when it varies by 5 percent or 10 kts (whichever is greater) from that filed in the flight plan.
6. The time and altitude or flight level upon reaching a holding fix or point to which cleared.
7. When leaving any assigned holding fix or point.
8. Any loss, in controlled airspace, of VOR, TACAN, ADF, LF navigation receiver capability, complete or partial loss of ILS receiver capability or impairment of air/ground communications capability. Reports should include aircraft ID, equipment affected, degree to which the capability to operate under IFR in the ATC system is impaired, and the nature and extent of assistance desired from ATC.
9. Any information relating to the safety of flight.

Not in radar contact:

1. Leaving final approach fix inbound on final approach (nonprecision approach) or when leaving the outer marker or fox used in lieu of the outer marker inbound on final approach (precision approach)
2. A corrected estimate at any time it becomes apparent that an estimate as previously submitted is in error in excess of three minutes.
3. Pilots encountering weather conditions which have not been forecast, or hazardous conditions which have been forecast, are expected to forward a report of such weather to ATC.

“Taxi with Clearance”:

An abbreviated method for informing the Ground Controlling Agency that you have received an ATC clearance and are ready to taxi for takeoff.

Handoff From Approach:

Setup for Approach: (FTI)

7.9. Useful Acronyms

7.9.1. Aviators are no different than other military people in their penchant for acronyms. Acronyms help us organize our thoughts and actions when the pace of events threatens to force them out of our field of view. Generally speaking, the tasks listed in the acronyms are meant to be performed in order because that is how they are ranked in terms of criticality.

7.9.2. **6 T's: Time** (note time/start the clock, as required), **Turn** (the aircraft as required), **Time** (start the clock as required), **Transition** (descend, decelerate as required, landing checklist), **Twist** (the course into the CDI/HSI), **Talk** (make appropriate voice reports).

7.9.3. **PASTT: Power** (set climb/cruise power), **Attitude** (adjust the nose for the climb as required), **Searchlight** (turn it off), **Turn** (to comply with missed approach/climbout instructions), **Talk** (make the appropriate missed approach call, reason for missed approach, and your intentions). Apply this acronym when you execute a missed approach. Be methodical in the completion of these items, but avoid unnecessary delays in making your missed approach call.

7.9.4. **WAR: Weather, Altimeter, Duty Runway.** This is what you request from ATC or your instructor prior to each approach where ATIS is not available.

7.9.5. **WNTB: Weather** (get WAR), **NAVAIDS** (tune and ID), **Timing** (compute as required), **Brief** (the approach). (Remember **We Need To Brief**).

7.11. Approach Brief

7.11.1. You have been provided a five-line approach brief checklist. The thing you must understand is that the purpose of the approach brief is to let the pilot flying the approach know what he's in for. The most effective way to do that is to understand the approach by studying chronologically (or cookbook style). Once you've given a good brief go to your five-line brief and make sure you covered all the easy-to-miss items. This technique will enable you to fly from a mental picture of your approach brief rather than referring to the approach plate as if you had never seen it. When you've demonstrated some proficiency in your brief, your instructor might, in the interest of giving you a dose of fleet cockpit procedures, brief the approaches for you. When this occurs, you are cautioned again not to become complacent. In briefing you while you fly, your instructor is trying to get you to do something some students have to work at: fly and listen at the same time. Include in your approach brief specific requests you have of your crew.

7.11.2. The five-line brief follows:

- Approach and page
- Weather minimums
- MDA/DH
- FAF and timing
- Missed approach point

Operations at Non-Towered Airfields(AIM):

4-1-9. Traffic Advisory Practices at Airports Without Operating Control Towers

(See [TBL 4-1-1.](#))

a. Airport Operations Without Operating Control Tower

1. There is no substitute for alertness while in the vicinity of an airport. It is essential that pilots be alert and look for other traffic and exchange traffic information when approaching or departing an airport without an operating control tower. This is of particular importance since other aircraft may not have communication capability or, in some cases, pilots may not communicate their presence or intentions when operating into or out of such airports. To achieve the greatest degree of safety, it is essential that all radio-equipped aircraft transmit/receive on a common frequency identified for the purpose of airport advisories.

2. An airport may have a full or part-time tower or FSS located on the airport, a full or part-time UNICOM station or no aeronautical station at all. There are three ways for pilots to communicate their intention and obtain airport/traffic information when operating at an airport that does not have an operating tower: by communicating with an FSS, a UNICOM operator, or by making a self-announce broadcast.

3. Many airports are now providing completely automated weather, radio check capability and airport advisory information on an automated UNICOM system. These systems offer a variety of features, typically selectable by microphone clicks, on the UNICOM frequency. Availability of the automated UNICOM will be published in the Airport/Facility Directory and approach charts.

b. Communicating on a Common Frequency

1. The key to communicating at an airport without an operating control tower is selection of the correct common frequency. The acronym CTAF which stands for Common Traffic Advisory Frequency, is synonymous with this program. A CTAF is a frequency designated for the purpose of carrying out airport advisory practices while operating to or from an airport without an operating control tower. The CTAF may be a UNICOM, MULTICOM, FSS, or tower frequency and is identified in appropriate aeronautical publications.

2. The CTAF frequency for a particular airport is contained in the A/FD, Alaska Supplement, Alaska Terminal Publication, Instrument Approach Procedure Charts, and Instrument Departure Procedure (DP) Charts. Also, the CTAF frequency can be obtained by contacting any FSS. Use of the appropriate CTAF, combined with a visual alertness and application of the following recommended good operating practices, will enhance safety of flight into and out of all uncontrolled airports.

TBL 4-1-1

Summary of Recommended Communication Procedures					
			Communication/Broadcast Procedures		
	Facility at Airport	Frequency Use	Outbound	Inbound	Practice Instrument Approach
1.	UNICOM (No Tower or FSS)	Communicate with UNICOM station on published CTAF frequency (122.7; 122.8;	Before taxiing and before taxiing on the	10 miles out. Entering downwind. base.	

		122.725; 122.975; or 123.0). If unable to contact UNICOM station, use self-announce procedures on CTAF.	runway for departure.	and final. Leaving the runway.	
2.	No Tower, FSS, or UNICOM	Self-announce on MULTICOM frequency 122.9.	Before taxiing and before taxiing on the runway for departure.	10 miles out. Entering downwind, base, and final. Leaving the runway.	Departing final approach fix (name) or on final approach segment inbound.
3.	No Tower in operation, FSS open	Communicate with FSS on CTAF frequency.	Before taxiing and before taxiing on the runway for departure.	10 miles out. Entering downwind, base, and final. Leaving the runway.	Approach completed/terminated.
4.	FSS Closed (No Tower)	Self-announce on CTAF.	Before taxiing and before taxiing on the runway for departure.	10 miles out. Entering downwind, base, and final. Leaving the runway.	
5.	Tower or FSS not in operation	Self-announce on CTAF.	Before taxiing and before taxiing on the runway for departure.	10 miles out. Entering downwind, base, and final. Leaving the runway.	

c. Recommended Traffic Advisory Practices

1. Pilots of inbound traffic should monitor and communicate as appropriate on the designated CTAF from 10 miles to landing. Pilots of departing aircraft should monitor/communicate on the appropriate frequency from start-up, during taxi, and until 10 miles from the airport unless the CFR's or local procedures require otherwise.

2. Pilots of aircraft conducting other than arriving or departing operations at altitudes normally used by arriving and departing aircraft should monitor/communicate on the appropriate frequency while within 10 miles of the airport unless required to do otherwise by the CFR's or local procedures. Such operations include parachute jumping/dropping, en route, practicing maneuvers, etc.

REFERENCE-
AIM, Parachute Jump Aircraft Operations, Paragraph 3-5-4.

d. Local Airport Advisory provided by an FSS

1. Local Airport Advisory (LAA) is a service provided at selected locations by an FSS physically located on an airport which does not have a control tower or where the tower is operated on a part-time basis. The CTAF for FSS's which provide this service will be disseminated in appropriate aeronautical publications.

2. In communicating with a CTAF FSS, establish two-way communications before transmitting outbound/inbound intentions or information. An inbound aircraft should report approximately 10 miles from the airport, reporting altitude and aircraft type, location relative to the airport, state whether landing or overflight, and request airport advisory. Departing aircraft should state the aircraft type, full identification number, type of flight planned, i.e., VFR or IFR and the planned destination or direction of flight. Report before taxiing and before taxiing on the runway for departure. If communications with a UNICOM are necessary after initial report to FSS, return to FSS frequency for traffic update.

(a) Inbound

EXAMPLE-

Vero Beach radio, Centurion Six Niner Delta Delta is ten miles south, two thousand, landing Vero Beach. Request airport advisory.

(b) Outbound

EXAMPLE-

Vero Beach radio, Centurion Six Niner Delta Delta, ready to taxi, VFR, departing to the southwest. Request airport advisory.

3. A CTAF FSS provides wind direction and velocity, favored or designated runway, altimeter setting, known traffic, NOTAM's, airport taxi routes, airport traffic pattern information, and instrument approach procedures. These elements are varied so as to best serve the current traffic situation. Some airport managers have specified that under certain wind or other conditions designated runways be used. Pilots should advise the FSS of the runway they intend to use.

CAUTION-

All aircraft in the vicinity of an airport may not be in communication with the FSS.

e. Information Provided by Aeronautical Advisory Stations (UNICOM)

1. UNICOM is a nongovernment air/ground radio communication station which may provide airport information at public use airports where there is no tower or FSS.

2. On pilot request, UNICOM stations may provide pilots with weather information, wind direction, the recommended runway, or other necessary information. If the UNICOM frequency is designated as the CTAF, it will be identified in appropriate aeronautical publications.

f. Unavailability of Information from FSS or UNICOM

Should LAA by an FSS or Aeronautical Advisory Station UNICOM be unavailable, wind and weather information may be obtainable from nearby controlled airports via Automatic Terminal Information Service (ATIS) or Automated Weather Observing System (AWOS) frequency.

g. Self-Announce Position and/or Intentions

1. **General.** Self-announce is a procedure whereby pilots broadcast their position or intended flight activity or ground operation on the designated CTAF. This procedure is used primarily at airports which do not have an FSS on the airport. The self-announce procedure should also be used if a pilot is unable to communicate with the FSS on the designated CTAF.

2. If an airport has a tower and it is temporarily closed, or operated on a part-time basis and there is no FSS on the airport or the FSS is closed, use the CTAF to self-announce your position or intentions.

3. Where there is no tower, FSS, or UNICOM station on the airport, use MULTICOM frequency 122.9 for self-announce procedures. Such airports will be identified in appropriate aeronautical information publications.

4. **Practice Approaches.** Pilots conducting practice instrument approaches should be particularly alert for other aircraft that may be departing in the opposite direction. When conducting any practice approach, regardless of its direction relative to other airport operations, pilots should make announcements on the CTAF as follows:

(a) Departing the final approach fix, inbound (nonprecision approach) or departing the outer marker or fix used in lieu of the outer marker, inbound (precision approach);

(b) Established on the final approach segment or immediately upon being released by ATC;

(c) Upon completion or termination of the approach; and

(d) Upon executing the missed approach procedure.

5. Departing aircraft should always be alert for arrival aircraft coming from the opposite direction.

6. Recommended self-announce phraseologies: It should be noted that aircraft operating to or from another nearby airport may be making self-announce broadcasts on the same UNICOM or MULTICOM frequency. To help identify one airport from another, the airport name should be spoken at the beginning and end of each self-announce transmission.

(a) Inbound

EXAMPLE-

*Strawn traffic, Apache Two Two Five Zulu, (position), (altitude), (descending) or entering downwind/base/final (as appropriate) runway one seven full stop, touch-and-go, Strawn.
Strawn traffic Apache Two Two Five Zulu clear of runway one seven Strawn.*

(b) Outbound

EXAMPLE-

*Strawn traffic, Queen Air Seven One Five Five Bravo (location on airport) taxiing to runway two six Strawn.
Strawn traffic, Queen Air Seven One Five Five Bravo departing runway two six. Departing the pattern to the (direction), climbing to (altitude) Strawn.*

(c) Practice Instrument Approach

EXAMPLE-

Strawn traffic, Cessna Two One Four Three Quebec (position from airport) inbound descending through (altitude) practice (name of approach) approach runway three five Strawn.

Strawn traffic, Cessna Two One Four Three Quebec practice (type) approach completed or terminated runway three five Strawn.

h. UNICOM Communications Procedures

1. In communicating with a UNICOM station, the following practices will help reduce frequency congestion, facilitate a better understanding of pilot intentions, help identify the location of aircraft in the traffic pattern, and enhance safety of flight:

- (a)** Select the correct UNICOM frequency.
- (b)** State the identification of the UNICOM station you are calling in each transmission.
- (c)** Speak slowly and distinctly.
- (d)** Report approximately 10 miles from the airport, reporting altitude, and state your aircraft type, aircraft identification, location relative to the airport, state whether landing or overflight, and request wind information and runway in use.
- (e)** Report on downwind, base, and final approach.
- (f)** Report leaving the runway.

2. Recommended UNICOM phraseologies:

- (a)** Inbound

PHRASEOLOGY-

FREDERICK UNICOM CESSNA EIGHT ZERO ONE TANGO FOXTROT 10 MILES SOUTHEAST DESCENDING THROUGH (altitude) LANDING FREDERICK, REQUEST WIND AND RUNWAY INFORMATION FREDERICK.

FREDERICK TRAFFIC CESSNA EIGHT ZERO ONE TANGO FOXTROT ENTERING DOWNWIND/BASE/FINAL (as appropriate) FOR RUNWAY ONE NINER (full stop/touch-and-go) FREDERICK.

FREDERICK TRAFFIC CESSNA EIGHT ZERO ONE TANGO FOXTROT CLEAR OF RUNWAY ONE NINER FREDERICK.

(b) Outbound

PHRASEOLOGY-

*FREDERICK UNICOM CESSNA EIGHT ZERO
ONE TANGO FOXTROT (location on airport)
TAXIING TO RUNWAY ONE NINER, REQUEST
WIND AND TRAFFIC INFORMATION
FREDERICK.*

*FREDERICK TRAFFIC CESSNA EIGHT ZERO
ONE TANGO FOXTROT DEPARTING RUNWAY
ONE NINER. "REMAINING IN THE PATTERN"
OR "DEPARTING THE PATTERN TO THE
(direction) (as appropriate)" FREDERICK.*

4-1-10. IFR Approaches/Ground Vehicle Operations

a. IFR Approaches. When operating in accordance with an IFR clearance and ATC approves a change to the advisory frequency, make an expeditious change to the CTAF and employ the recommended traffic advisory procedures.

b. Ground Vehicle Operation. Airport ground vehicles equipped with radios should monitor the CTAF frequency when operating on the airport movement area and remain clear of runways/taxiways being used by aircraft. Radio transmissions from ground vehicles should be confined to safety-related matters.

c. Radio Control of Airport Lighting Systems. Whenever possible, the CTAF will be used to control airport lighting systems at airports without operating control towers. This eliminates the need for pilots to change frequencies to turn the lights on and allows a continuous listening watch on a single frequency. The CTAF is published on the instrument approach chart and in other appropriate aeronautical information publications. For further details concerning radio controlled lights, see AC 150/5340-27, Air-to-Ground Radio Control of Airport Lighting Systems.

4-1-12. Use of UNICOM for ATC Purposes

UNICOM service may be used for ATC purposes, only under the following circumstances:

1. Revision to proposed departure time.
2. Takeoff, arrival, or flight plan cancellation time.
3. ATC clearance, provided arrangements are made between the ATC facility and the UNICOM licensee to handle such messages.

Crew Coordination: (FTI)

7.10. Aircrew Coordination

7.10.1. You will be challenged by your instructor to demonstrate sound and effective aircrew coordination skills in flight. By the time you reach the RI stage you will have completed integrated aircrew coordination classroom training. You will need to be well versed in crew coordination concepts during your BI and RI training. Crew coordination is the teamwork that rises from effective cockpit communication. It is a strategy and a tool by which aviators work cooperatively to accomplish the mission safely and effectively. It is not simply the apportionment of cockpit chores.

7.10.2. The NATOPS brief is the aircraft commander's plan for the conduct of the flight. Therefore, the NATOPS brief is the time to develop your crew coordination plan. If you want your instructor to give you a call 100' prior to all leveloffs or a call 10 seconds prior to all timing, this is the time to let him know. Don't ever assume that blanket requests will be adequate. When you brief the approach later, specifically ask for it again along with other requests (twisting radials into CDI/HSI, for instance). Your instructor might accidentally miss the timing or leveloff call. It is his responsibility to meet his commitments to you; however, bear in mind that it is the responsibility of the pilot at the controls to ensure the aircraft is flown the way it should be flown. Back-up your back-up and bear in mind that the instructor might "miss" the call once in a while to make sure your BAW has not become voice-activated. The single greatest advantage aircrew coordination offers is that it provides two sets of eyes, ears, and minds to handle the workload. The single greatest threat hidden there is that one pilot might get lured into thinking that only one set will get the job done. That pilot might be right 99% of the time. The remaining 1% is where our mishaps occur, too often fatally. Paragraph 1.7 of this instruction covers aircrew coordination in greater detail.

Option Approach: (AIM)

4-3-22. Option Approach

The "Cleared for the Option" procedure will permit an instructor, flight examiner or pilot the option to make a touch-and-go, low approach, missed approach, stop- and-go, or full stop landing. This procedure can be very beneficial in a training situation in that neither the student pilot nor examinee would know what maneuver would be accomplished. The pilot should make a request for this procedure passing the final approach fix inbound on an instrument approach or entering downwind for a VFR traffic pattern. The advantages of this procedure as a training aid are that it enables an instructor or examiner to obtain the reaction of a trainee or examinee under changing conditions, the pilot would not have to discontinue an approach in the middle of the procedure due to student error

or pilot proficiency requirements, and finally it allows more flexibility and economy in training programs. This procedure will only be used at those locations with an operational control tower and will be subject to ATC approval.

Cleared Approach/Approach Procedures:

5-4-6. Approach Clearance

a. An aircraft which has been cleared to a holding fix and subsequently "cleared . . . approach" has not received new routing. Even though clearance for the approach may have been issued prior to the aircraft reaching the holding fix, ATC would expect the pilot to proceed via the holding fix (his/her last assigned route), and the feeder route associated with that fix (if a feeder route is published on the approach chart) to the initial approach fix (IAF) to commence the approach.

WHEN CLEARED FOR THE APPROACH, THE PUBLISHED OFF AIRWAY (FEEDER) ROUTES THAT LEAD FROM THE EN ROUTE STRUCTURE TO THE IAF ARE PART OF THE APPROACH CLEARANCE.

b. If a feeder route to an IAF begins at a fix located along the route of flight prior to reaching the holding fix, and clearance for an approach is issued, a pilot should commence the approach via the published feeder route; i.e., the aircraft would not be expected to overfly the feeder route and return to it. The pilot is expected to commence the approach in a similar manner at the IAF, if the IAF for the procedure is located along the route of flight to the holding fix.

c. If a route of flight directly to the initial approach fix is desired, it should be so stated by the controller with phraseology to include the words "direct . . . ," "proceed direct" or a similar phrase which the pilot can interpret without question. When uncertain of the clearance, immediately query ATC as to what route of flight is desired.

d. The name of an instrument approach, as published, is used to identify the approach, even though a component of the approach aid, such as the glideslope on an Instrument Landing System, is inoperative or unreliable. The controller will use the name of the approach as published, but must advise the aircraft at the time an approach clearance is issued that the inoperative or unreliable approach aid component is unusable.

5-4-7. Instrument Approach Procedures

a. Minimums are specified for various aircraft approach categories based upon a value 1.3 times the stalling speed of the aircraft in the landing configuration at maximum certificated gross landing weight. (See 14 CFR Section 97.3(b).) If it is necessary, while circling-to-land, to maneuver at speeds in excess of the upper limit of the speed range for each category, due to the possibility of extending the circling maneuver beyond the area for which obstruction clearance is provided, the circling minimum for the next higher approach category should be used. For example, an aircraft which falls in Category C, but is circling to land at a speed of 141 knots or higher should use the approach category "D" minimum when circling to land.

b. When operating on an unpublished route or while being radar vectored, the pilot, when an approach clearance is received, shall, in addition to complying with the minimum altitudes for IFR operations (14 CFR Section 91.177), maintain the last assigned altitude unless a different altitude is assigned by ATC, or until the aircraft is established on a segment of a published route or IAP. After the aircraft is so established, published altitudes apply to descent within each succeeding route or approach segment unless a different altitude is assigned by ATC. Notwithstanding this pilot responsibility, for aircraft operating on unpublished routes or while being radar vectored, ATC will, except when conducting a radar approach, issue an IFR approach clearance only after the aircraft is established on a segment of a published route or IAP, or assign an altitude to maintain until the aircraft is established on a segment of a published route or instrument approach procedure. For this purpose, the procedure turn of a published IAP shall not be considered a segment of that IAP until the aircraft reaches the initial fix or navigation facility upon which the procedure turn is predicated.

EXAMPLE-

Cross Redding VOR at or above five thousand, cleared VOR runway three four approach.

or

Five miles from outer marker, turn right heading three three zero, maintain two thousand until established on the localizer, cleared ILS runway three six approach.

NOTE-

The altitude assigned will assure IFR obstruction clearance from the point at which the approach clearance is issued until established on a segment of a published route or IAP. If uncertain of the meaning of the clearance, immediately request clarification from ATC.

c. Several IAP's, using various navigation and approach aids may be authorized for an airport. ATC may advise that a particular approach procedure is being used, primarily to expedite traffic. If issued a clearance that specifies a particular approach procedure, notify ATC immediately if a different one is desired. In this event it may be necessary for ATC to withhold clearance for the different approach until such time as traffic conditions permit. However, a pilot involved in an emergency situation will be given priority. If the pilot is not familiar with the specific approach procedure, ATC should be advised and they will provide detailed information on the execution of the procedure.

REFERENCE-

AIM, Advance Information on Instrument Approach, Paragraph [5-4-4](#).

d. At times ATC may not specify a particular approach procedure in the clearance, but will state "CLEARED APPROACH." Such clearance indicates that the pilot may execute any one of the authorized IAP's for that airport. This clearance does not constitute approval for the pilot to execute a contact approach or a visual approach.

e. Except when being radar vectored to the final approach course, when cleared for a specifically prescribed IAP; i.e., "cleared ILS runway one niner approach" or when "cleared approach" i.e., execution of any procedure prescribed for the airport, pilots shall execute the entire procedure commencing at an IAF or an associated feeder route as described on the IAP chart unless an appropriate new or revised ATC clearance is received, or the IFR flight plan is canceled.

f. Pilots planning flights to locations served by special IAP's should obtain advance approval from the owner of the procedure. Approval by the owner is necessary because special procedures are for the exclusive use of the single interest unless otherwise authorized by the owner. Additionally, some special approach procedures require certain crew qualifications training, or other special considerations in order to execute the approach. Also, some of these approach procedures are based on privately owned navigational aids. Owners of aids that are not for public use may elect to turn off the aid for whatever reason they may have; i.e., maintenance, conservation, etc. Air traffic controllers are not required to question pilots to determine if they have permission to use the procedure.

Controllers presume a pilot has obtained approval and is aware of any details of the procedure if an IFR flight plan was filed to that airport.

g. When executing an instrument approach and in radio contact with an FAA facility, unless in "radar contact," report passing the final approach fix inbound (nonprecision approach) or the outer marker or fix used in lieu of the outer marker inbound (precision approach).

h. Pilots should not rely on radar to identify a fix unless the fix is indicated as "RADAR" on the IAP. Pilots may request radar identification of an OM, but the controller may not be able to provide the service due either to workload or not having the fix on the video map.

i. If a missed approach is required, advise ATC and include the reason (unless initiated by ATC). Comply with the missed approach instructions for the instrument approach procedure being executed, unless otherwise directed by ATC.

REFERENCE-

AIM, Missed Approach, Paragraph [5-4-19](#).

AIM, Missed Approach, Paragraph [5-5-5](#).

Communications:

4-2-3. Contact Procedures

a. Initial Contact.

1. The terms *initial contact* or *initial callup* means the first radio call you make to a given facility or the first call to a different controller or FSS specialist within a facility. Use the following format:

(a) Name of the facility being called;

(b) Your *full* aircraft identification as filed in the flight plan or as discussed under Aircraft Call Signs below;

(c) The type of message to follow or your request if it is short; and

(d) The word "Over" if required.

EXAMPLE-

1. "New York radio, Mooney Three One One Echo."

2. "Columbia ground, Cessna Three One Six Zero Foxtrot, I-F-R Memphis."

3. "Miami center, Baron Five Six Three Hotel, request V-F-R traffic advisories."

3. If radio reception is reasonably assured, inclusion of your request, your position or altitude, and the phrase "(ATIS) Information Charlie received" in the initial contact helps decrease radio frequency congestion. Use discretion; do not overload the controller with information unneeded or superfluous. If you do not get a response from the ground station, recheck your radios or use another transmitter, but keep the next contact short.

c. Subsequent Contacts and Responses to Callup from a Ground Facility.

Use the same format as used for the initial contact except you should state your message or request with the callup in one transmission. The ground station name and the word "Over" may be omitted if the message requires an obvious reply and there is no possibility for misunderstandings. *You should acknowledge all callups or clearances* unless the controller or FSS specialist advises otherwise. There are some occasions when controllers must issue time-critical instructions to other

aircraft, and they may be in a position to observe your response, either visually or on radar. If the situation demands your response, take appropriate action or immediately advise the facility of any problem. Acknowledge with your aircraft identification, either at the beginning or at the end of your transmission, and one of the words "Wilco," "Roger," "Affirmative," "Negative," or other appropriate remarks; e.g., "PIPER TWO ONE FOUR LIMA, ROGER." If you have been receiving services; e.g., VFR traffic advisories and you are leaving the area or changing frequencies, advise the ATC facility and terminate contact.

d. Acknowledgement of Frequency Changes.

1. When advised by ATC to change frequencies, acknowledge the instruction. If you select the new frequency without an acknowledgement, the controller's workload is increased because there is no way of knowing whether you received the instruction or have had radio communications failure.

2. At times, a controller/specialist may be working a sector with multiple frequency assignments. In order to eliminate unnecessary verbiage and to free the controller/specialist for higher priority transmissions, the controller/specialist may request the pilot "(Identification), change to my frequency 123.4." This phrase should alert the pilot that the controller/specialist is only changing frequencies, not controller/specialist, and that initial callup phraseology may be abbreviated.

EXAMPLE-

"United Two Twenty-Two on one two three point four" or "one two three point four, United Two Twenty-Two."

e. Compliance with Frequency Changes.

When instructed by ATC to change frequencies, select the new frequency as soon as possible unless instructed to make the change at a specific time, fix, or altitude. A delay in making the change could result in an untimely receipt of important information. If you are instructed to make the frequency change at a specific time, fix, or altitude, monitor the frequency you are on until reaching the specified time, fix, or altitudes unless instructed otherwise by ATC.

REFERENCE-

AIM, ARTCC Communications, Paragraph [5-3-1](#).