

05-29 Lecture: Pre-flight Preparation, NOTAMs, and Flight Planning Procedures

Date & Time: 2025-05-29 17:19:27

Location: [Insert Location]

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NOTAMs

Flight Plan

Meteorological Briefing

Theme

This lecture provides a comprehensive overview of pre-flight preparation for pilots, focusing on the retrieval and interpretation of NOTAMs, meteorological briefings, and the process of creating and submitting flight plans. It covers essential topics such as decoding NOTAMs, understanding restricted airspace, using significant weather charts, and ensuring compliance with operational procedures to enhance flight safety and efficiency.

Takeaways

1. NOTAMs: definition, retrieval, and interpretation
2. Pre-flight preparation steps
3. PIB (Pre-flight Information Bulletin): purpose and content
4. Categories of NOTAMs: N, C, R
5. Decoding NOTAMs: date/time format and abbreviations
6. Meteorological briefing: significance and process
7. Significant weather charts: usage and interpretation basics
8. Restricted, danger, and prohibited areas: identification and rules
9. Filing and submitting flight plans: process and common errors
10. Importance of checking NOTAMs for every cross-country trip

Highlights

- "Because imagine if you would have not read this information, and then BAM, there's a helicopter in front of you."-- Speaker 3

- "This doesn't absolve the pilot in command of the responsibility."-- Speaker 3
- "If you forget one of the abbreviations or words, you just Google, and then you can check what is that."-- Speaker 3

Chapters & Topics

NOTAMs: Definition, Retrieval, and Interpretation

NOTAMs (Notices to Airmen) are essential pre-flight information containing operational details, incidents, or changes at airports and en route that may affect flight safety. They must be checked for departure, destination, and alternate airports, as well as en route airspace.

- **Keypoints**

- NOTAMs provide critical information about airport operations, incidents, or hazards.
- They are retrieved via specific websites (e.g., notamphil.s) using airport codes.
- NOTAMs enhance situational awareness and must be checked before every cross-country trip.
- NOTAMs are categorized as N (new), C (canceled), and R (replaced).
- Decoding NOTAMs requires understanding the date/time format: year, month, day, hour, minute, all in UTC.
- Practice is necessary to decode NOTAMs for exams.

- **Explanation**

The instructor demonstrated how to retrieve NOTAMs from the designated website, inputting airport codes for both departure and destination. The process includes checking the bulletin request section, confirming acceptance, and reading the operational details such as tower hours and warnings (e.g., medical helicopters in the vicinity). The importance of reading and understanding NOTAMs was emphasized with practical examples and exam tips.

- **Examples**

The instructor showed how to use the website to request NOTAMs for a flight from Logroño to Sao Paulo, including entering airport codes (e.g., Logroño, Bilbao) and checking the bulletin for operational hours and warnings about medical helicopters.

- Navigate to the NOTAM website and log in.
- Enter the departure and destination airport codes.
- Submit the request and check for acceptance.

- Read the NOTAM details, such as tower operation hours (e.g., Monday to Friday, 4.45 Zulu to 12.50 Zulu, and 16.45 to 20.20 Zulu).

- Note any warnings (e.g., medical helicopters near the hospital area).

A NOTAM for Exeter airport stated runway 0826 closed due to WIP from 18.00 UTC to 23.00 UTC on 6th January 2022, formatted as 22.01.06 18.00 to 23.00.

- Identify the year (2022), month (01), day (06), and time (18.00 to 23.00 UTC).
- Understand that all times are in UTC and the format is year, month, day, hour, minute.

- **Considerations**

- Always check NOTAMs for all relevant airports and en route segments before flight.
- Practice decoding NOTAMs, especially date/time formats, for exams.
- Be aware of operational warnings (e.g., medical helicopters, closed runways).

- **Special Circumstances**

- If encountering a NOTAM with unfamiliar abbreviations, refer to official guides or practice examples to decode them.
- If a NOTAM indicates a closed runway or restricted area, adjust the flight plan accordingly to maintain safety.

Pre-flight Preparation and PIB (Pre-flight Information Bulletin)

Pre-flight preparation involves gathering all necessary information for a safe flight, including NOTAMs, meteorological data, and the PIB, which summarizes operationally significant data for the route.

- **Keypoints**

- Retrieve NOTAMs and meteorological information before every flight.
- PIB is a summary of valid operational data, available via internet-based briefing tools.
- Check opening hours, temporary changes, closures, special procedures, obstructions, and frequency changes.
- En route NOTAMs must be checked for airspace, routings, and restricted areas.

- **Explanation**

The instructor explained the process of preparing for a flight, emphasizing the need to check NOTAMs, meteorological data, and the PIB. The PIB is provided by national aviation authorities in conjunction with ATC and contains all relevant operational information for the planned route.

- **Examples**

The instructor read from a 15-page PIB, highlighting the importance of the first pages, which contain critical information such as airport hours, special procedures, and obstructions.

- Access the PIB via the designated website.
- Focus on the initial pages for the most important operational details.
- Use the PIB to verify opening hours, closures, and any special procedures.
- **Considerations**
- Always check the latest PIB before commencing any flight.
- Pay attention to temporary changes and closures that may affect the flight.
- **Special Circumstances**
- If the PIB indicates a temporary closure or special procedure, ensure the flight plan is adjusted and all crew are informed.

Meteorological Briefing and Significant Weather Charts

Meteorological briefing is essential for confirming atmospheric conditions, calculating ground speed, lag times, and ensuring statutory minimums are met. Significant weather charts are used to identify meteorological threats along the route.

- **Keypoints**
 - Obtain meteorological briefing directly prior to flight.
 - Use significant weather charts to identify clouds, weather threats, and their altitudes.
 - Meteorological data is necessary for calculating trip times and ground speed.
 - Practice reading weather charts for exams.
- **Explanation**

The instructor demonstrated how to access meteorological information and significant weather charts via the designated website. The charts show cloud layers, their minimum altitudes (e.g., 12,000 feet), and help determine if weather conditions are suitable for flight.
- **Examples**

The instructor showed a weather chart for Spain, identifying Madrid, Barcelona, Santiago, Malaga, and Alicante, and explained how to determine cloud layers and weather threats for a route from Burgos to Santander.

 - Access the significant weather chart for the relevant time and date.
 - Identify the route and check for cloud layers and their altitudes.
 - Determine if the weather is clear or if there are threats that require route adjustments.
- **Considerations**
- Always check the latest meteorological data before flight.
- Understand how to read significant weather charts for both practical use and exams.
- **Special Circumstances**

- If significant weather threats are identified on the route, consider alternate routes or delay the flight.

Restricted, Danger, and Prohibited Areas

Certain airspace areas are designated as restricted, danger, or prohibited, often due to military activity, sensitive infrastructure, or safety concerns. These areas are marked on maps and must be avoided or overflown only at specified altitudes.

- **Keypoints**

- Restricted, danger, and prohibited areas are marked on VFR maps.
- Minimum and maximum altitudes for these areas are specified (e.g., ground level to flight level 8-0).
- Some areas, such as near nuclear power stations, are strictly prohibited for overflight.

- **Explanation**

The instructor showed examples of restricted and prohibited areas near Burgos and Logroño, explaining the altitude limits and the reasons for restrictions (e.g., military camps, nuclear power stations).

- **Examples**

A danger area next to Burgos airport (military camp) is restricted from ground level to flight level 8-0. Overflight is only allowed above this altitude.

- Identify the area on the map.
- Check the altitude limits (e.g., ground to FL 8-0).
- Plan the route to avoid or overfly at permitted altitudes.

- **Considerations**

- Always check maps for restricted, danger, and prohibited areas before planning the route.
- Understand the altitude restrictions and reasons for area designation.

- **Special Circumstances**

- If a planned route crosses a restricted or prohibited area, adjust the flight plan to comply with regulations.

Filing and Submitting Flight Plans

Flight plans must be accurately completed and submitted for approval. Errors in details such as passport numbers can lead to rejection. Flight plans can be submitted online or via radio for clearance.

- **Keypoints**

- Flight plans cover the whole route or can be abbreviated for specific segments.

- Submission errors (e.g., incorrect passport numbers) are common causes for rejection.
- Madrid or relevant authorities must accept the flight plan before departure.
- **Explanation**

The instructor explained the process of submitting flight plans, common errors, and the importance of accuracy. Flight plans can be rejected if details are incorrect, so careful review is necessary.
- **Examples**

Students often enter the wrong passport number (e.g., number five instead of number one), leading to rejection of the flight plan.

 - Double-check all personal and flight details before submission.
 - If rejected, correct the error and resubmit.
- **Considerations**
 - Review all details carefully before submitting the flight plan.
 - Understand the process for both online and radio submission.
- **Special Circumstances**
 - If a flight plan is rejected, identify and correct the error promptly to avoid delays.

Flight Plan Creation and Submission

The process of creating and submitting a flight plan involves entering detailed information about the flight, including call sign, aircraft type, equipment, departure and destination aerodromes, estimated times, route, and supplementary information. Each field has specific requirements and conventions that must be followed for the plan to be accepted and valid.

- **Keypoints**
 - Call sign must include the full identifier, e.g., FPL, and instructor's number (e.g., FPL 14A).
 - Flight rules: 'V' for VFR (Visual Flight Rules), 'I' for IFR (Instrument Flight Rules), 'X' for other types such as school or training flights.
 - Aircraft type must be entered using the correct code (e.g., 'cruise' for cruiser, 'PS28' for certain models).
 - Weight turbulence category: 'L' for aircraft with maximum takeoff mass of 7,000 kg or less.
 - Equipment codes: 'S' for standard, 'Y' for 8.33 kHz VHF spacing, 'S' for transponder with all identification.
 - Departure and destination aerodromes must be specified; if no standard code exists, special entry is required.
 - Estimated onboard time is entered in Zulu (UTC) time.

- Estimated enroute time (EET) must be calculated based on wind, ground speed, and leg duration.
- Remarks must include school flight, instructor and student details, passport numbers, and contact information.
- Supplementary information includes emergency radio, persons on board, endurance, pilot in command, and aircraft color/markings.

- **Explanation**

The instructor demonstrated the step-by-step process of filling out a flight plan using the FPL system, emphasizing the importance of accuracy in each field. For round trips, two separate flight plans are required, each with its own estimated time. The instructor also explained how to check the status of submitted plans and handle rejections, such as overlapping flight periods.

- **Examples**

A student schedules a flight at 09:00 Zulu from Logroño to Santander using a cruiser aircraft. The call sign is FPL 14A, flight rule is V (VFR), type is X (school flight), number is 1, type is 'cruise', weight category is L, equipment is Sierra Yankee, transponder is Sierra. Estimated enroute time is 1.30 for each leg. Remarks include instructor and student details, passport numbers, and phone numbers. Supplementary info: emergency radio is Echo, persons on board is 2, endurance is 5 hours 30 minutes, aircraft color is white and blue with flyby logo.

- Student checks schedule in SEPA and notes flight time at 09:00 Zulu.
- Enters all required information in the FPL system as instructed.
- Files two separate flight plans for outbound and return legs, each with 1.30 estimated enroute time.
- Checks for acceptance or rejection in FP inquiry.
- If rejected due to overlapping, reviews and corrects call sign or timing.

- **Considerations**

- Always double-check all entered information before submitting the flight plan.
- Use the correct codes for aircraft type and equipment as per the school's documentation.
- Ensure estimated times are realistic and account for possible delays.
- Include all required personal and contact information in the remarks.
- For round trips, submit two separate flight plans.

- **Special Circumstances**

- If the flight is delayed more than 60 minutes (uncontrolled) or 30 minutes (controlled), amend or resubmit the flight plan.
- If the aerodrome has no standard identification, use the special entry procedure.
- If the flight plan is rejected due to overlapping, check for duplicate call signs or aircraft registrations and correct them.

- If ATC does not report arrival, the pilot must contact the relevant ATS authority to confirm landing.

Flight Delay and Arrival Reporting Procedures

Procedures for handling flight delays and arrival reporting depend on whether the flight is controlled (with ATC) or uncontrolled (without ATC). There are strict time limits for delays and responsibilities for reporting arrival to ensure safety and compliance.

• Keypoints

- For uncontrolled flights, delays of up to 60 minutes are permitted before amending or resubmitting the flight plan.
- For controlled flights (with ATC, e.g., Burgos, Logroño), only 30 minutes delay is allowed.
- Arrival must be reported to the appropriate ATS authority as soon as possible after landing.
- If ATC forgets to report arrival, the pilot is responsible for notifying the ATS authority.
- Failure to arrive within the estimated enroute time may trigger search and rescue operations.

• Explanation

The instructor explained that delays are common and provided the exact time limits for both controlled and uncontrolled flights. The process for delaying a flight plan in the FPL system was demonstrated. Arrival reporting is usually handled by ATC at controlled aerodromes, but the pilot must take responsibility if ATC does not report. At uncontrolled aerodromes, the pilot must call the relevant ATS authority directly.

• Examples

A student scheduled to depart at 09:00 Zulu is delayed at the airport. For an uncontrolled flight, the student can delay up to 60 minutes using the FPL system. For a controlled flight, only 30 minutes delay is allowed before the plan must be amended or resubmitted.

- Student accesses the FPL system and selects 'delay' for the active flight plan.
- Enters the new estimated onboard time, ensuring it does not exceed the allowed delay.
- Waits for Madrid to accept the updated plan before proceeding.

After landing at a glider airstrip with no ATC, the pilot calls Madrid center to report safe arrival and closure of the flight plan.

- Pilot lands and completes post-flight checks.
- Contacts Madrid center by telephone to confirm arrival.
- Ensures the flight plan is closed in the system.

- **Considerations**

- Always be aware of the maximum allowed delay for your flight type.
- Ensure arrival is reported promptly to avoid unnecessary search and rescue activation.
- If ATC does not report your arrival, take initiative to notify the ATS authority.

- **Special Circumstances**

- If delayed beyond the allowed time, amend or resubmit the flight plan before departure.
- If unable to contact ATC at an uncontrolled aerodrome, use alternative means (telephone, data link) to report arrival.

Aircraft Type Codes and Equipment Codes

Correctly identifying the aircraft type and equipment codes is essential for flight plan acceptance. Different aircraft in the fleet may have different codes, and equipment codes must reflect the actual capabilities of the aircraft.

- **Keypoints**

- Cruiser aircraft may be identified as 'cruise' or 'PS28' depending on the model.
- Tecnam aircraft: 'Syrah' for 2002, 'P2008' for 2008 models.
- Weight turbulence category 'L' for aircraft under 7,000 kg.
- Equipment codes: 'S' for standard, 'Y' for 8.33 kHz VHF, 'S' for transponder with all identification.
- Reference school documentation or Moodle for correct codes.

- **Explanation**

The instructor detailed the specific codes for each aircraft type in the fleet and explained how to check the correct code for the aircraft scheduled. Equipment codes were also explained, with reference to their functions and when to use each.

- **Examples**

When scheduled to fly Echo Charlie Oscar Delta X-ray (Tecnam 2008), the student must enter 'P2008' as the aircraft type in the flight plan.

- Student checks the schedule and identifies the aircraft.
- Refers to school documentation to confirm the correct code.
- Enters 'P2008' in the flight plan system.

- **Considerations**

- Always verify the correct aircraft type code before submitting the flight plan.
- Use the correct equipment codes based on the actual capabilities of the aircraft.

- **Special Circumstances**

- If unsure of the correct code, consult the school's documentation or Moodle before filing.

Flight Scheduling and Time Entry (Zulu Time, Estimated Off-Block Time)

Procedures for entering scheduled departure and arrival times in flight plans, specifically using Zulu (UTC) time and the estimated off-block time (AOBT).

- **Keypoints**

- Scheduled times must be entered in Zulu (UTC) time, not local time.
- Estimated off-block time (AOBT) is the time the aircraft is expected to start moving for departure.
- Example: If scheduled at 07:30, enter 07:30 Zulu in the estimated off-block time field.
- Flight time calculations should be accurate and reflect the planned legs (e.g., 1 hour 30 minutes each way).

- **Explanation**

The instructor emphasized that all scheduled times in flight plans must be entered in Zulu time. For example, if a flight is scheduled to depart at 07:30, this time should be entered as 07:30 in the estimated off-block time field. The same applies for arrival times. The total flight time should be calculated based on the planned route, such as 1 hour 30 minutes for each leg, totaling 3 hours for a round trip.

- **Examples**

A flight from Burgos to Santander is scheduled to depart at 07:30 and arrive at 09:00. The return leg departs at 09:00 and arrives at 10:30. Both legs are 1 hour 30 minutes each. The estimated off-block time for the first leg is 07:30 Zulu.

- Identify the scheduled departure time (07:30 Zulu).
- Enter 07:30 in the estimated off-block time field.
- Calculate the flight time for each leg (1 hour 30 minutes).
- Total flight time for the round trip is 3 hours.

- **Considerations**

- Always use Zulu (UTC) time, not local time.
- Ensure accuracy in flight time calculations for each leg.

- **Special Circumstances**

- If scheduled at a different time (e.g., 10:00), enter that exact time in Zulu in the estimated off-block time field.

Flight Plan Structure and Required Information

Details on how to fill out a flight plan, including departure, arrival, route, codes, and supplementary information.

- **Keypoints**

- Departure and arrival aerodromes must be entered with their ICAO codes.

- If an aerodrome does not have an ICAO code, enter 'ZZZZ'.
- Route section must include all waypoints and airways to be flown.
- For VFR flights, 'VFR' may be entered in the cruising level section.
- Supplementary information includes endurance, number of passengers, emergency equipment, and pilot in command.

- **Explanation**

The instructor explained that each section of the flight plan must be filled out accurately. If the departure or destination aerodrome lacks an ICAO code, 'ZZZZ' should be entered. The route section should detail the planned route, and for VFR flights, 'VFR' is entered in the cruising level section. Supplementary information such as endurance (e.g., 5 hours 30 minutes for full tanks), number of passengers, and emergency equipment must also be included.

- **Examples**

A VFR flight from an aerodrome without an ICAO code requires 'ZZZZ' in the departure or destination field. The route is entered as planned, and 'VFR' is specified in the cruising level section.

- Check if the aerodrome has an ICAO code.
- If not, enter 'ZZZZ'.
- Enter the planned route in the route section.
- For VFR, enter 'VFR' in the cruising level section.
- **Considerations**
- Ensure all required fields are completed accurately.
- Use 'ZZZZ' for aerodromes without ICAO codes.
- **Special Circumstances**
- If the flight is to or from an aerodrome without an ICAO identifier, enter 'ZZZZ' and provide additional details in the remarks section.

Cruising Speed and Level Notation

Explanation of how to enter cruising speed and level in flight plans, including the use of N (knots), K (km/h), F (flight level), and A (altitude in hundreds of feet).

- **Keypoints**

- N followed by four digits indicates speed in knots (e.g., N0106 = 106 knots).
- K is used for kilometers per hour, but not typically used in aviation.
- F followed by three digits indicates flight level (e.g., F040 = FL040 = 4,000 feet).
- A followed by three digits indicates altitude in hundreds of feet (e.g., A020 = 2,000 feet AMSL).
- For VFR flights, cruising level may be omitted or 'VFR' entered.

- **Explanation**

The instructor clarified the notation for cruising speed and level. N is used for knots, K for kilometers per hour (rarely used), F for flight level, and A for altitude in hundreds of feet. For VFR flights, cruising level is not mandatory and 'VFR' can be entered.

- **Examples**

For a flight at 106 knots and flight level 040, enter N0106 and F040 in the respective fields.

- Determine the cruising speed (e.g., 106 knots).
- Enter as N0106.
- Determine the cruising level (e.g., FL040).
- Enter as F040.

- **Considerations**

- Use the correct notation for speed and level.
- For VFR, cruising level entry is flexible.

- **Special Circumstances**

- If flying VFR, cruising level may be omitted or 'VFR' entered.

Supplementary Information: Endurance, Passengers, Emergency Equipment

Details on entering supplementary information in the flight plan, including fuel endurance, number of passengers, and emergency/survival equipment codes.

- **Keypoints**

- Endurance is the maximum time the aircraft can fly with full tanks (e.g., 5 hours 30 minutes).
- Number of passengers: 2 for dual (with instructor), 1 for solo.
- Emergency equipment codes: U (UHF 243 MHz), V (VHF 121.5 MHz), E (ELBA emergency locator beacon), S (survival equipment: P, D, M, G for polar, desert, maritime, jungle).
- Cross out codes for equipment not carried.
- Jackets and lights are only required if flying over sea or ocean.

- **Explanation**

The instructor detailed how to enter supplementary information. Endurance should reflect the aircraft's maximum with full tanks. The number of passengers depends on whether the flight is dual or solo. Emergency and survival equipment codes must be entered, and codes for equipment not carried should be crossed out. Jackets and lights are only necessary for flights over water.

- **Examples**

For a solo flight with full tanks, endurance is 5 hours 30 minutes, passengers is 1, and only VHF 121.5 MHz is carried (cross out other codes).

- Enter endurance as 5:30.
- Enter number of passengers as 1.
- Cross out U and E if not carried, leave V for VHF 121.5 MHz.
- **Considerations**
- Ensure all codes accurately reflect equipment carried.
- Do not enter jackets or lights unless flying over water.
- **Special Circumstances**
- If not carrying a specific emergency or survival equipment, cross out the corresponding code.

Finding Enroute Frequencies and Information Sources

How to find frequencies for enroute flight information services and check operational status of navigational aids.

- **Keypoints**
 - Use the AIP (Aeronautical Information Publication) enroute section to find frequencies.
 - ARP (Aerodrome Reference Point) and NOTAMs (Notices to Airmen) provide additional information.
 - Check the operational status of VHF navigational aids before departure.
- **Explanation**

The instructor explained that pilots should consult the AIP enroute section to find the frequencies needed for enroute communication with ATC. The ARP and NOTAMs are also useful sources for operational information. Before departure, verify that VHF navigational aids are operational.
- **Examples**

When planning a flight from Madrid to Warsaw, consult the AIP enroute section for a list of frequencies to use along the route.

 - Identify the route (Madrid to Warsaw).
 - Open the AIP enroute section.
 - Find and note the required frequencies for each segment.
- **Considerations**
- Always verify frequencies before flight.
- Check NOTAMs for last-minute changes.
- **Special Circumstances**
- If unsure of a frequency, consult the AIP or ask ATC.

Airfield Operational Hours and Codes

Understanding airfield operational hours as indicated in ARP and their codes (e.g., 24, 34 hours).

- **Keypoints**

- Code '24' means the airfield operates 24 hours a day.
- Code '34' was mentioned but appears to be a misstatement; focus on '24' for 24-hour operation.
- Check ARP for operational hours before planning arrival.

- **Explanation**

The instructor clarified that if the ARP states '24', the airfield is open 24 hours. This is important when planning arrivals, especially for late or early flights.

- **Examples**

If planning to arrive at 19:00 Zulu, check the ARP. If it states '24', the airfield is open and available.

- Look up the airfield in the ARP.
- Find the operational hours code.
- If '24', proceed with planning.

- **Considerations**

- Always verify airfield hours before flight.

- **Special Circumstances**

- If the airfield is not open 24 hours, adjust your schedule accordingly.

Crosswind and Tailwind Calculation Methods

Methods for calculating crosswind and tailwind components, including the use of trigonometric functions (sine).

- **Keypoints**

- Crosswind component is calculated using the sine of the angle between wind direction and runway heading.
- If the angle is less than 90 degrees, use the sine function.
- If the wind is from behind (tailwind), adjust calculations accordingly.
- Example calculation: $0.5 \times 0.5 \text{ minus } 30 \text{ divided by } 0.5 \text{ equals } 0.6$.

- **Explanation**

The instructor demonstrated how to calculate crosswind and tailwind components using trigonometric functions. For crosswind, use the sine of the angle between the wind and runway. If the wind is from behind, it is a tailwind and calculations must be adjusted.

- **Examples**

Given wind from 240°, runway heading 270°, calculate the crosswind component using the sine of the angle difference.

- Calculate the angle difference ($270^\circ - 240^\circ = 30^\circ$).
- Use $\sin(30^\circ)$ to find the crosswind component.
- Multiply wind speed by $\sin(30^\circ)$ for the result.
- **Considerations**
- Use correct trigonometric functions for accurate results.
- Adjust for tailwind if wind is from behind.
- **Special Circumstances**
- If the angle is more than 90 degrees, recalculate as a tailwind.

Assignments & Suggestions

- Practice decoding NOTAMs, especially date and time formats, in preparation for the exam.
- Familiarize yourself with the process of retrieving NOTAMs and meteorological information from the designated websites.
- Review significant weather charts and practice interpreting them for different routes.
- Check VFR maps for restricted, danger, and prohibited areas relevant to your planned routes.