

**Docket No. SA-530**

**Exhibit No. 9-N**

**NATIONAL TRANSPORTATION SAFETY BOARD**

**Washington, D.C.**

Flight Safety Bell 412 Course Syllabus

(6 Pages)

## **COURSE OUTLINE**

### **Bell 412 Recurrent Training**

#### **GENERAL OPERATIONAL SUBJECTS MODULES**

Weight and Balance Module  
Performance Module  
Flight Planning Module  
Approved Rotorcraft Flight Manual Module  
Windshear Training Module  
Crew Resource Management (CRM) Module

**TOTAL HOURS                      2.0**

#### **AIRCRAFT SYSTEMS MODULES**

Aircraft General  
Powerplant  
Fire Protection  
Fuel System  
Electrical  
Lighting  
Caution / Warning System and IIDS (As Applicable)  
Powertrain  
Main Rotor  
Tail Rotor  
Flight Controls / AFCS  
Hydraulic Power  
Environmental Systems  
Ice and Rain Protection  
Avionics  
Kits and Accessories  
Preflight  
Systems Review, Examination, and Critique

**TOTAL HOURS                      10.0**

#### **SYSTEMS INTEGRATION**

Systems Integration Module  
Aircraft Checklists

**TOTAL HOURS                      0.75**

#### **BRIEFING HOURS**

Simulator Briefing

**TOTAL HOURS                      4.50**

**GROUND SCHOOL HOURS                      17.25**

**412 SIMULATOR TRAINING**

Simulator Module 1	1.5
Simulator Module 2	1.5
Simulator Module 3	1.5
<b><u>TOTAL</u></b>	<b><u>4.5</u></b>

**COURSE OBJECTIVE**

To provide pilots with the academic and practical “Hands–On” training required to maintain Pilot In Command (PIC) qualification in the Bell Model 412.

**ACADEMICS**

Instructor guided classroom discussions using PowerPoint Presentation to present subjects as follows (see next page):

## **GENERAL OPERATIONAL SUBJECTS MODULES**

### **WEIGHT AND BALANCE MODULE**

General, Principles and Methods of Weight and Balance Determination

### **PERFORMANCE MODULE**

Use of charts, Tables, Tabulated Data, and Other Related Material

### **FLIGHT PLANNING MODULE**

Factor Relating to Flight Planning

### **APPROVED ROTORCRAFT FLIGHT MANUAL (RFM) MODULE**

Applicability and Description and Organization Normal, Abnormal, and Emergency Procedures Sections  
Systems Description  
Bulletins and Supplements

### **WINDSHEAR TRAINING MODULE**

Windshear Weather Avoidance

### **CREW RESOURCE MANAGEMENT (CRM) MODULE**

Situational Awareness and the Error Chain  
Stress  
Communications  
Synergy and Crew Concept  
Workload Management  
Decision Making

## **AIRCRAFT SYSTEMS MODULES**

### **AIRCRAFT GENERAL MODULE**

Major Aircraft Sections, Dimensions and Structures  
Crew & Passenger Seating and Emergency Exits  
Servicing  
Parking, Mooring and Towing

### **POWERPLANT MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

### **FIRE PROTECTION MODULE**

General  
Operation  
Limitations

Emergency/Malfunctions Procedures

### **FUEL SYSTEM MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

### **ELECTRICAL MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

### **LIGHTING MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**CAUTION / WARNING SYSTEM AND  
IDDS (As Applicable) MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**POWERTRAIN MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**MAIN ROTOR MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**TAIL ROTOR MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**FLIGHT CONTROLS / AFCS MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**HYDRAULIC MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**ENVIRONMENTAL SYSTEMS  
MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**ICE AND RAIN PROTECTION  
MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**AVIONICS MODULE**

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**KITS AND ACCESSORIES MODULE**

*(NOTE: Only The Customers Optional  
Equipment Will Be Discussed)*

General  
Operation  
Limitations  
Emergency/Malfunctions Procedures

**PREFLIGHT MODULES**

Before Exterior Check  
Exterior Check

**SYSTEM REVIEW, EXAMINATION,  
and CRITIQUE**

Written Examination with a Passing Grade of  
70%, Corrected to 100%

## **SYSTEMS INTEGRATION MODULE**

The training modules presented in the Systems Integration subject area provides the pilots with instruction on aircraft systems interrelationships with respect to normal, abnormal and emergency procedures. Pilots will be introduced to, and will exercise in, the elements of Crew Resource Management as part of the integration process, including, but not limited to such elements as: Situational Awareness and the Error Chain, Synergy and Crew Concept, and Workload Assessment and Time Management. Pilot will become familiar with the cockpit layout, checklists, maneuvers, and procedures. Lessons are normally conducted in a cockpit procedures mockup, cockpit procedures trainer, or flight training device.

## **SYSTEM INTEGRATION MODULE 1**

Aircraft Checklists  
Normal Procedures  
Abnormal Procedures

## **SIMULATOR TRAINING:**

This course provides 4.5 hours PIC training in the Bell 412 Flight Simulator. When training as a crew, each pilot receives an additional 4.5 hours in the co-pilot position. Simulator flights are 1.5 hours each, during which each maneuver, or procedure is demonstrated and practiced to proficiency. The pilot has the opportunity to practice a variety of both normal and malfunction / emergency procedures. As pilot's background and job requirements vary, each pilot will be trained in the environment most closely approximating his job requirements.

Should the pilot not be instrument rated, Instrument Tasks will not be trained or checked.

## **SIMULATOR MODULE No 1**

Brief/Debrief (Special Emphasis Areas)  
Runway Incursion (Oral Only)  
Anti-Torque System/Tail Rotor Failure  
(Oral Only)  
Loss of Tail Rotor Effectiveness (LTE)  
(Oral Only)  
Preflight Procedures  
Preflight Inspection (Cockpit Only)  
Powerplant Start  
Before Takeoff Checks  
Hover/Taxi Maneuvers  
Ground Taxi (If Applicable)  
Hover Taxi  
Takeoffs and Landings  
Normal Takeoff  
Normal Approach and Landing

Normal and/or Malfunction Procedures  
Powerplant  
Flight Control Systems  
Emergency Procedures  
Hydraulic Systems  
Fire Detection and Extinguishing  
Postflight Procedures  
After Landing Procedures  
Parking and Securing

## **SIMULATOR MODULE No 2**

Brief/Debrief (Special Emphasis Areas)  
Dynamic Rollover (Oral Only)  
Low Rotor RPM (Oral Only)  
Hover/Taxi Maneuvers  
Slope Operations (If Applicable)  
Takeoffs and Landings  
Normal Takeoff

- Normal Approach and Landing
- Powerplant Failure During Takeoff
- Rejected Takeoff (Emergency Deceleration)
- Confined Area Operations
- Pinnacle/Platform Operations
- Inflight Maneuvers
  - Settling with Power
- Instrument Procedures
  - Inadvertent IMC Procedures
  - Precision Approach (Coupled, if Applicable) (FOR TRAINING ONLY)
- Normal and/or Malfunction Procedures
  - Electrical Systems
  - Navigation and Avionics Systems
  - AFCS/EFIS and Related Subsystems

**SIMULATOR MODULE No 3**  
**(Proficiency/Competency Check)**

- Flight Testing Events
  - Preflight Procedures
  - Takeoff and Departure Maneuvers
  - Inflight Maneuvers
  - Instrument Procedures
  - Landings and Approaches to Landings
  - Normal and/or Malfunction Procedures
  - Emergency Procedures
  - Postflight Procedures

**COMPLETION STANDARDS**

The pilot must demonstrate proficiency in all maneuvers and procedures for Simulator Module No 3.