



# MANANG AIR

## SAFETY BULLETIN 2020



Issue IV | January 2020

### SAFETY BULLETINS

- Message From Executive Chairman
- Safety Activities By Manang Air Pvt. Ltd on 2019
- Flight In Mountainous Terrain
- 5 Ways to Improve Maintenance & Operations

#### MESSAGE FROM EXECUTIVE CHAIRMAN

Once again I am very delighted to know that Manang Air is coming up with the next publication of Safety Bulletin January 2020. On behalf of Manang Air I am extremely happy to see the continuing publication of Safety Bulletin and efforts made by all the concerned to publish their tips of articles, which I think would motivate all of us to read some of the recent happening on Aviation industry, particularly to move forward to support the continuous improvement of Aviation Safety. The main thrust of Manang Air has always been the "Safety First", however our prioritization is equally focused to the customer needs by providing them the sense of confident and comfort while on board to Manang Air fleet.

We strive hard to identify the areas where by we can be more proactive to Aviation safety in Co-ordination with all stake holders and Safety policies of regulatory bodies to reduce the incident risk of Helicopter operation in Nepal.

**Mr. Satis Prasad Pradhan**  
Accountable Manager  
(Executive Chairman)



#### ABSTRACT

This bulletin establishes information about the safety issues in aviation. The purpose is to continuously contribute to the safety issues in an effective manner & enhancing safe flight operations.

On behalf of Manang Air, we would like to thank all our members, clients and our travelers for their valuable contribution to enhance safety. We look forward for continuous support as usual for journey ahead.

#### FLIGHT IN MOUNTAINOUS TERRAIN

Flight in Mountainous Terrain is considered to be planned VFR following the contours of the earth at altitudes below the height of the surrounding peaks. Threats and Defenses are applied for Helicopter operations.... (Continued in page 3)

#### 5 WAYS TO IMPROVE MAINTENANCE & OPERATIONS

-By Mr. Digamber Rajbhandari

The journey to best performance in any organization is a good team effort from engineering, production and Operation group in an organization. It requires involving them in improving business quality system and assuring individual's competency in quality work When the Maintenance function is used for the business- growth and success, it requires us to take on new belief and paradigms about the ways how the maintenance and operation need to work together... (Continued in page 2)

#### Editorial Board:-

- CAPT. CHET BDR. GURUNG, DIRECTOR, FLIGHT SAFETY
- FOO. RAJU NEUPANE, MANAGER, SAFETY
- FOO. ANURUP PATHAK, SAFETY OFFICER

#### Company contact details:

- 🏠 106 N. K. Singh Marga, Minbhawan, Kathmandu, Nepal
- ☎ +977-1-4115984/85 (Hunting)
- ☎ +977-1-4115886
- 📠 +977-9801180461/462/502 (24x7)
- ✉ operation@manangair.com.np
- ✉ marketing@manangair.com.np
- ✉ info@manangair.com.np
- 🌐 www.manangair.com.np



#### for suggestion and feedback

E-mail: [safety@manangair.com.np](mailto:safety@manangair.com.np)

Note: The Safety Reporting Form is available at [www.manangair.com.np](http://www.manangair.com.np) for any kind of hazard observed.



# MANANG AIR

## SAFETY BULLETIN 2020



Issue IV | January 2020

### **5 WAYS TO IMPROVE MAINTENANCE & OPERATION**

... (Continued from page 1)

#### **1. Define exactly the process, and equipment reliability practices and principles to use.**

The people working in Maintenance and Operation must know through proper training, teaching and method about how the reliability of their equipment should be functioning in an efficient way. They should be able to measure their result by applying various tools and techniques, and then only you will have exactly the level of reliability as defined by you for which you require consistent efforts and dedication at your work.

#### **2. Life – long Learning and Up-skilling:**

Only experts can be expected to deliver expert performance. Big organizations have system in-place to train and provide hands-on experiences that teach their people to be better and to do their work efficiently without compromising the Airworthiness and Safety of equipment. In addition to basic engineering knowledge and work skills in Aviation Maintenance, the Maintenance people mostly gather their knowledge and learning by observing and mimicking the others doing the Maintenance jobs. After years of services they are thought to be 'experienced', but in truth their skills and knowledge reflect the quality of past training they received Poor quality, low- value training results in poor quality, low- value experience. They then use that experience to run and maintenance of the equipment in the business. Whether people are in Maintenance or Operation they can only up-skill by learning new information and being taught new concept and new development during their re-curent training as per the requirement of regulatory bodies. To master their job and always produce high quality work, maintenance and operation require the specific training in the engineering and quality control of the equipment they operate and production process they run. To increase the contributions from your people they need systematic and regular training in the right knowledge and best- practices.

#### **3. Set Standards to Quality Assurance:**

To keep the equipment functioning to continually maintain to optimum acceptable condition and producing in-specification product, the Maintenance of equipment's must be done right, and be done to design accuracy meeting all the standard requirement as laid out by regulatory bodies. Ensuring the required work quality needs a quality assurance process. Quality means setting standards and meeting the standard of the requirement / procedures and regulation of the regulatory bodies. Hence doing maintenance with quality requires setting standards for every maintenance action performed on an equipment's to ensure the necessary standard is achieved every time. Without standards to meet and measure against, you are using luck and happenstance to run your engineering and operation.

#### **4. Provide Instant access to Engineering knowledge:**

The Maintenance personnel need correct information on technical data on equipment parts, procedure, their engineering limitation and their in-specification installation and use. They must have ready access to how their equipment's processes work and how their jobs are properly functioning. No matter how experiences the Maintenance / operation personnel in handling the job they must have the access to the right information to the latest revision of all the effected technical data for doing work precisely. With this means of using the right information from latest technical data it will show the job are done in accordance with the right information provided by OEM.

#### **5. Engineering / Operation Team work:**

Although the personnel are authorized and licensed from regulatory authority one should not think he is master on that subject. Learning has no limit. There are too many variables and intricacies that can impact on their engineering and operation. Once you connect people with various expertise and knowledge of your equipment's, it is likely that someone in the group knows the best answer to the problem. A gestalt of engineering and operation is a wonderful opportunity to put the best of everyone's knowledge and experience to us to improve the business. The management has to encourage to Co-ordinate among the team by providing the various training as required by the regulatory to continue achieving the optimum level of safety and comfort to the customer. By doing this the team will have the capacity within itself to solve any equipment's and production process within the organization. By creating a gestalt you are multiplying the effectiveness and problem- solving power of each person on the team.

**MANANG AIR ROTOR SAFETY TIP**

**Land and Live**

**LAND AND LIVE** should be the philosophy of every pilot and operator.

*If you can't fly SAFE, the mission can WAIT.*





# MANANG AIR

## SAFETY BULLETIN 2020



Issue IV | January 2020

### FLIGHT IN MOUNTAINOUS TERRAIN

... (Continued from page 1)

- **Threats:** The numerous critical threats encountered whilst contour flying in mountainous terrain are detailed below.
- **Terrain:** The mountain terrain is highly variable. Valleys can be wide with gentle sweeping turns or very narrow with abrupt changes in direction or dead ends commonly referred to as box or blind canyons. Ridge heights can often exceed 10,000' and the rate of change in terrain elevation can vary from gentle slopes to near vertical cliffs several thousand feet in height. Terrain awareness is a critical component.
- **Wind:** Winds Interaction can lead to updrafts, downdrafts and turbulence which may exceed aircraft limitations. Mountain waves are associated with strong winds blowing perpendicular to the mountain range and are generally considered a mid to high altitude risk. However, for an aircraft contour flying in the mountains, winds well below the speed required to generate mountain waves can result in very hazardous clear air turbulence conditions. The wind is funneled and turned by the obstacles and updrafts and downdrafts are created. In general, a wind parallel to a valley is funneled in the valley and a venturi effect can be caused where the valley narrows
- **Weather:** Penetrating weather localized phenomena such as upslope or orographic wind and dry microburst can all lead to deteriorating weather.
- **Ambient Lighting:** Unless the sun is directly overhead, all or part of the valley may be in shadow.
- **Aircraft Performance:** Aircraft performance decreases with an increase in density altitude.
- **Situational Awareness:** A momentary loss of situational awareness could result in a navigation error.
- **Effects:** The threats of wind, weather, lighting, aircraft performance and situational awareness may occur in combination with one another and will always be associated with the principal threat of terrain.
- **Weather:**  
Localized weather can completely obscure a mountain pass or a valley. Orographic lift can cause upslope cloud or fog to form. Moderate to heavy rain can reduce visibility below acceptable limits. The mountains may be snow covered above the tree line. Even a light snow shower can effectively cause whiteout conditions. When there is a large temperature

/dew point spread, a thunderstorm with or without virga present can cause a dry microburst to occur. This can result in extremely hazardous wind conditions as well as obscure visibility in blowing dust.

- **Ambient Lighting:** When flying towards the sun due to the increased glare and the additional contrast between shaded and non-shaded terrain shaded areas can mask the presence of a hill or outcropping that does not conform to the general slope of the rest of the valley creating a CFIT hazard.
- **Aircraft Performance:** Variations in altitude between valley base and crest, the ridge may tax aircraft capabilities.

#### - **Defenses:**

##### **Preparatory Training**

- Obtain a mountain flying "checkout" from instructor.
- Understand aircraft performance and limitations.
- Be able to proficiently accomplish a minimum radius turn. In mountain flying, the most common escape strategy is a 180 degree turn which may have to be accomplished in a narrow valley.
- Be proficient in VFR navigation techniques.

##### **Preflight**

- Plan and study your route.
- Obtain a comprehensive weather briefing.
- Reduce aircraft weight.

##### **Inflight**

- Fly early as possible. Wind and convective effects are generally less prevalent early in the day.
- Flying part way up the side of the valley will give enhanced escape options.
- Continuously update your escape strategy.
- In a crosswind situation, fly on the downwind side of the valley to take advantage of the rising air.
- Increase the crossing height with increasing winds. Be at your planned crossing height well before reaching the ridge and maintain the altitude until well past the crossing to help mitigate any possible negative wind effects.
- Approach a ridge at a 45 angle. This allows for a better escape option
- Do not continue into deteriorating weather. Make turn back decisions early.
- Maintain situational awareness.
- If required to turn back, initiate the turn and when the turn is complete, return to normal settings.

#### - **Contributory Factors**

The single most common factor in CFIT accidents during flight in mountainous terrain is the failure of the pilot to turn back when encountering deteriorating weather, excessive wind speeds or turbulence or losing situational awareness.



# MANANG AIR

## SAFETY BULLETIN 2020



Issue IV | January 2020

### MANANG AIR SAFETY ACTIVITIES

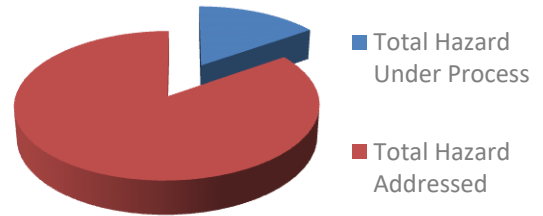
Manang Air has conducted various extra safety activities as below in 2019.

- Safety Bulletin 3<sup>rd</sup> Issue Published in 01<sup>st</sup> January 2019
- Winter Precautions Training conducted on 07th January 2019.
- AS350 Type Refresher (Ground + Flight) Training from Airbus Helicopter conducted on 14th January 2019 for Instructor Pilot.
- Company Indoctrination & Glass Cockpit (G500H) Familiarization Training conducted on 29th January 2019.
- Flight Dispatcher Orientation Class conducted on 07th-13th February 2019
- Instruction Class on Manufacturer Service Bulletin & Safety Circular conducted on 15th March 2019.
- Post Holder Briefing Class conducted on 25th April 2019.
- High Altitude Ground Class conducted on 17th May 2019.
- Ground Handling Instruction, Ramp Operations, Fueling Procedure & Handling Instruction, Engine / Rotor Running Refuels conducted on 28th May 2019.
- Monsoon Operations & CFIT Briefing conducted on 26th May 2019, 07th June 2019 & 21st July 2019.
- SMS Basic Course conducted on 17th-26th June 2019
- Hazard Identification & Risk Assessment for Flight Training conducted on 18th August 2019.
- Safety & Operations Briefing for AS350 Helicopter Operations conducted on 09th September 2019.
- High Altitude Briefing for AS350 Helicopter Operations conducted on 12th September 2019.
- Type training of Arriel 2D engine at Safran helicopter, Singapore from 23th-27th September 2019 for two Technicians.
- Type training on Airframe of AS350B3e at Airbus Helicopter, Singapore from 30th September to 11th October 2019 for one Technician.
- Wire Strike Accident Prevention Training conducted on 21st October 2019.
- Safety Survey conducted on December 2019 among the staffs for the subject of Safety Culture within the Organization.
- Safety & Operations Procedure Briefing for Helicopter Operation in Nepal conducted on 22nd November 2019.
- Winter Precautions Briefing for Helicopter Operation conducted on 20<sup>th</sup> December 2019.

### MANANG AIR SAFETY ISSUES

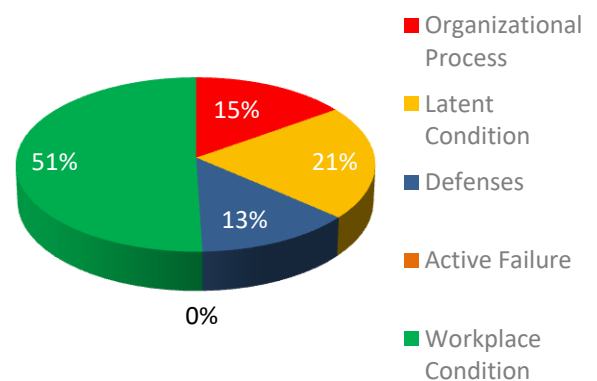
#### Safety Reports-2019

##### Safety Reports



#### Safety Survey December-2019

##### RISK AREAS FOR COMPANY HELICOPTER OPERATION



#### Safety Culture

*A culture of safety is a journey, not a destination, it requires our continuing diligence.*