



Council President Certificate



Aviation Safety Report 2020

Civil Aviation Authority of Nepal

Foreword

Currently, we are in a critical time as the whole humanity is suffering due to the global pandemic of COVID-19. It is supposedly the greatest threat of the century affecting public health as well as economy globally. Aviation stands prominent among all the sectors that have been hit tremendously by this crisis. However, this sector has responded instantaneously to the needs generated by the crisis. We have witnessed aviation prove its significance, even during this strenuous time, by contributing in our fight against this pandemic through transportation of medical supplies, repatriation missions for stranded passengers, rescue missions and flights relating to other essential supplies.

Before COVID-19 pandemic, we were expecting significant growth in air traffic as Government of Nepal had declared the Year 2020 as Visit Nepal Year. This anticipation stemmed from the average growth rates of international and domestic flight movements for last ten years that have been recorded to be 8 percent and 2.3 percent respectively. Similarly, international passenger movement for last 10 years has been registered to be 7.7 percent which is in line with APAC growth rate whereas in domestic front this growth rate is 9.6 percent.

With the ever increasing number of aviation activities, it is the primary objective of CAAN to ensure Safe, secure, efficient and standard air transport service in the country. CAAN is working constantly to address and enhance Nepali aviation safety by following the Standards and Recommended Practices (SARPs) stipulated in Annexes to the Convention on International Civil Aviation and various related guidance prescribed by ICAO. In accordance to the regulatory framework established by CAAN, air transport industry needs to deliver safe services. In this regard, management of aviation safety in the country is not inherent in CAAN alone; utmost dedication and sincerity from the industry and collaboration of the endeavors of all stakeholders hold significance for this purpose.

This Safety Report, 2020 is the fourth edition of the Aviation Safety Report that started being published from 2016. It provides a summary on safety activities, initiatives and updates on safety indicators, reactive and proactive safety information, safety promotional activities of CAAN in year 2019 and the progress on implementation of Nepal Aviation Safety Plan (NASP) 2018-2022. It is based on Safety data (mandatory and voluntary) collected by state and operators, ICAO USOAP Audit Reports, and Accident Investigation conducted by MoCTCA. It also depicts Nepal's status in USOAP Audit as well as in the field of SSP implementation.

I hope this report will successfully serve the purpose of its publication and play a part in inculcating safety culture in the aviation stakeholders of Nepal.




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Executive Summary

The geographical distribution of Nepal ranges from Mountain region (3000m and above), to Hilly region (below 3000 meters and above 1000 meters) and Terai region (below 1000 meters up to 60 meters above mean sea level) This distribution, covering variety of topography and hence meteorological conditions, demands different type of aircraft so as to connect with all parts of Nepal.

With the limitation regarding type of aircraft to be operated in most of the STOL airfields that are subject to manoeuvring restrictions, the operations in different regions of Nepal pose different levels of complexity. Moreover, helicopter operations are almost inevitable and hence frequent in remote sector owing to the demand of rescue and relief flights. These specific conditions prevalent in Nepal have resulted in quite a heterogeneous fleet operating in the airspace of Nepal.

Despite a decrease in international and domestic traffic movement in 2019 compared to that in 2018, there is a positive trend of increase in traffic movement in the last 10 years.

The trend of fatality related to aeroplane accident has registered a continuous steep drop. However, the fatality related to helicopter accidents has undergone a rise in trend during 2010-2019. During the past ten years, there has been a continuous increase in helicopter operation. The abundance of remote topography in the country demands helicopter operations for logistic, rescue and relief purposes in mountainous terrain. Similarly, growth in tourism has also led to the increase in helicopter operations. Since such operation carries a higher risk factor considering the geography and weather, the accidents related to helicopter operations still remains a challenge in the field of Nepali aviation.

With regards to the category of aircraft, in the sector of aeroplane, higher number of fatal accidents and also that of fatality have been recorded to have occurred with the multiengine aircraft with 19 seats or less capacity. Such aircraft have witnessed 9 accidents with 135 fatalities in the past ten years. The second in the list is helicopter operations with 8 fatal accidents and 29 fatalities.

During the last ten years, aircraft operating in STOL sector have suffered comparatively more number of accidents than the aircraft operating in trunk sector. Out of 20 accidents that occurred during the period, 17 occurred in the STOL sector rendering the STOL operation comparatively riskier.

Analyzing the causes of accident with aeroplane in the past ten years, top three high risk categories of accident were CFIT, LOCI and RE on the basis of a combination of factors such as number of accidents and fatal accidents together with the fatality percentage witnessed by such category of aircraft.

Mandatory Occurrence Reporting (MOR) is one of the sources of reactive safety information. 572 occurrences were reported mandatorily in 2019 against 414 in 2018. Studying the type of occurrences based on their severity, only three accidents have occurred in the year 2019. 48 serious incidents and 521 incidents were registered in 2019. As per this data derived from the MORs in 2019, based on the number and severity of the occurrences, the significant seven areas posing risk to Nepali civil aviation sector for the year 2020 are RE (Runway Excursion), LOC-I (Loss of Control in Flight), BIRD (Bird Hazard), MAC (Airprox/Tcas Alert/Loss Of Separation/Near Midair Collisions/Midair Collisions), SCF-NP (System Component Failure-Non Power Plant), NAV (Navigational Aids), and RAMP. Similarly, top five risky phases have been calculated to be take-off, en-route, approach, landing and standing phase respectively.

Similarly, there has been a progressive development regarding the proactive source of information especially in the area of voluntary information reporting. The approaches such as introduction of SMS audits, vigorous safety promotion and collaboration with stakeholders in SMS matters have played a significant role in spreading awareness in a deeper way. As a result, 819 hazards have been reported in the year 2019 against 512 in 2018.

Nepal Aviation Safety Plan (NASP), 2018-2022 has been developed in congruence with the Global Aviation Safety Plan (GASP), Doc.10004. NASP (2018-2022) has identified six areas of operational safety risk, viz.

Controlled Flight into Terrain (CFIT), Loss of Control in Flight (LOC-I), Mid Air Collision (MAC), Runway Incursion (RI), Runway Excursion (RE) and Wild life Strike (WS).

Of all these operational safety risks, wildlife is a prominent area of concern in the South Asian Region. Voices from this region, including Nepal, were raised in the 13th, 14th, and 15th meetings of the APRAST (Asia Pacific Regional Aviation Safety Team) for the need of including Wild life Strike as the operational safety risk of Asia Pacific Region in the RASP APAC (Regional Aviation Safety Plan, Asia Pacific Region). In this regard, APRAST has formed a Safety Reporting Programme Working Group (SRPWG) for the purpose of studying in this area and identify the safety enhancement initiatives (SEIs) in the area of wildlife. Therefore, this report has included the data related to wildlife hazard in Nepal.

In 2019, second phase of SMS audits were conducted in the airline operators of Nepal. SMS performance of the operators was analysed based basically on their SMS audit reports.

Improvement was also observed in each of the level of compliant activity during the follow up audit of both aeroplane and helicopter operations against the level achieved in the initial audit

The Effective Implementation of Nepal in the last USOAP audit is 66.76% which is above the benchmark of 60% set by ICAO through its Global Aviation Safety Plan (GASP). Nepal has made a significant progress in its oversight capability since the initial audit in 2009.

Nepal is ranked 20th in RASG-APAC with respect to overall effective implementation within this group. Nepal rates above the average of RASG-APAC.

Nepal has started to implement SSP for effective state safety management. Now, CAAN has completed 72.69% of total required SSP foundation and is in Level 2 with 90.5% of work completed in that phase (SSP implementation as depicted by ICAO iSTARs SSP implementation dashboard).

During 2019, CAAN performed various activities for the enhancement of safety and inculcation of safety culture among all. Various promotional activities were carried out by CAAN solely and also in collaboration with aviation stakeholders.



Abbreviations and Acronyms

AGA-	Aerodrome and Ground Aids
AIG-	Aircraft Accident and Incident Investigation
AIR-	Airworthiness
Airprox-	Aircraft Proximity
ANS-	Air Navigation Services
APAC-	Asia Pacific
APRAST-	Asia Pacific Regional Aviation Safety Team
ATM-	Air Traffic Management
ATS-	Air Traffic Services
CAAN-	Civil Aviation Authority of Nepal
CAP-	Corrective Action Plan
CAST-	Commercial Aviation Safety Team
CE-	Critical Element
CFIT-	Controlled Flight into Terrain
CICTT-	CAST/ICAO Common Taxonomy Team
DHM-	Department of - Hydrology and Meteorology
EI-	Effective Implementation
FH-	Flying Hours
GASP-	Global Aviation Safety Plan
HRC-	High Risk Category
ICAO-	International Civil Aviation Organization
ICVM-	ICAO Coordinated Validation Mission
LEG-	Legislation
LOC-I-	Loss of Control- In Flight
MAC-	Mid Air Collision
MoCTCA-	Ministry of Culture, Tourism and Civil Aviation
MOR-	Mandatory Occurrence Reporting
MTOW-	Maximum Take-Off Weight
NASP-	Nepal Aviation Safety Plan
NAV-	Navigation
OPS-	Operations

ORG-	Organization
PEL-	Personnel Licensing
PQs-	Protocol Questions
RASG-	Regional Aviation Safety Group
RASP-	Regional Aviation Safety Plan
RE-	Runway Excursion
RI-	Runway Incursion
RS-	Runway Safety
SARPs-	Standards and Recommended Practices
Sch.-	Scheduled
SEI-	Safety Enhancement Initiative
SMS-	Safety Management System
SMSIGM-	Safety Management System Implementation Guidance Material
SRPWG-	Safety Reporting Programme Working Group
SSP-	State Safety Programme
STOL-	Short Take-off and Landing
TIA-	Tribhuvan International Airport
USOAP-	Universal Safety oversight Audit Programme
WS-	Wildlife Strike



56th DGCA Conference, August 2019, Kathmandu, Nepal.

Air Transport Management in Nepal largely depends upon its geography and meteorological conditions. With the limitation regarding type of aircraft to be operated in most of the STOL airfields that are subject to manoeuvring restrictions, the operations in different regions of Nepal pose different levels of complexity. Moreover, helicopter operations are almost inevitable and hence frequent in remote sector owing to the demand of rescue and relief flights. Thirdly, larger aircraft carry out international flights to/from the only international airport, TIA, Nepal. Other trunk sectors have been witnessing operations by medium category of aircraft. These specific conditions prevalent in Nepal have resulted in quite a heterogeneous fleet operating in the airspace of Nepal. The smallest type of aircraft (besides helicopters) based on the maximum take off mass has been the LET 410, while the largest aircraft is the A330.

Similarly, ultralights are also one of the prominent aircraft in the field of recreational aviation. As of the date of publication of this report, total 19

airliners are into operation with 9 of them operating fixed wing aircraft, 9 operating helicopters and 1 operating a mixed fleet of fixed and helicopter aircraft. Helicopter operators in Nepal are involved in chartered as well as rescue and relief flights. Of the 9 fixed wing operators, 1 is an exclusive international scheduled operator, 3 are into both domestic and international scheduled operations, and the remaining are involved in scheduled domestic operations. One operator owning both helicopters and fixed winged aircraft has been operating international chartered flights together with domestic chartered, rescue and relief flights with its helicopters and scheduled domestic flights with the fixed winged aircraft.

Recreational activities also occupy a significant space in Nepali Aviation. There are 78 recreational institutions currently in operation. In total 4 ultralight companies and 1 balloon company are in operation. Similarly, 70 paragliding companies and 3 paragliding schools are in operation as of the date of publication of this Report.

AIRCRAFT OPERATIONS IN NEPAL



Air Traffic Movement in Nepal (2010 to 2019)

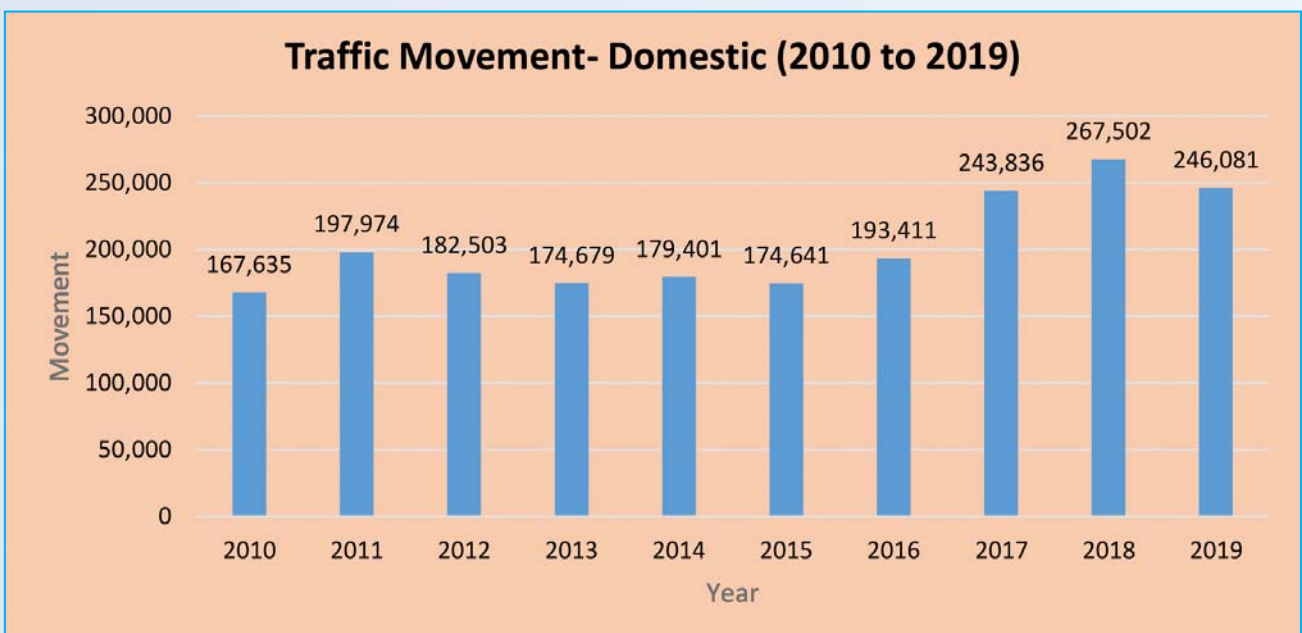
International

Despite a decrease of 4.14% in international traffic movement in 2019 compared to that in 2018, there is a positive trend of increase in traffic movement in the last 10 years.



Domestic

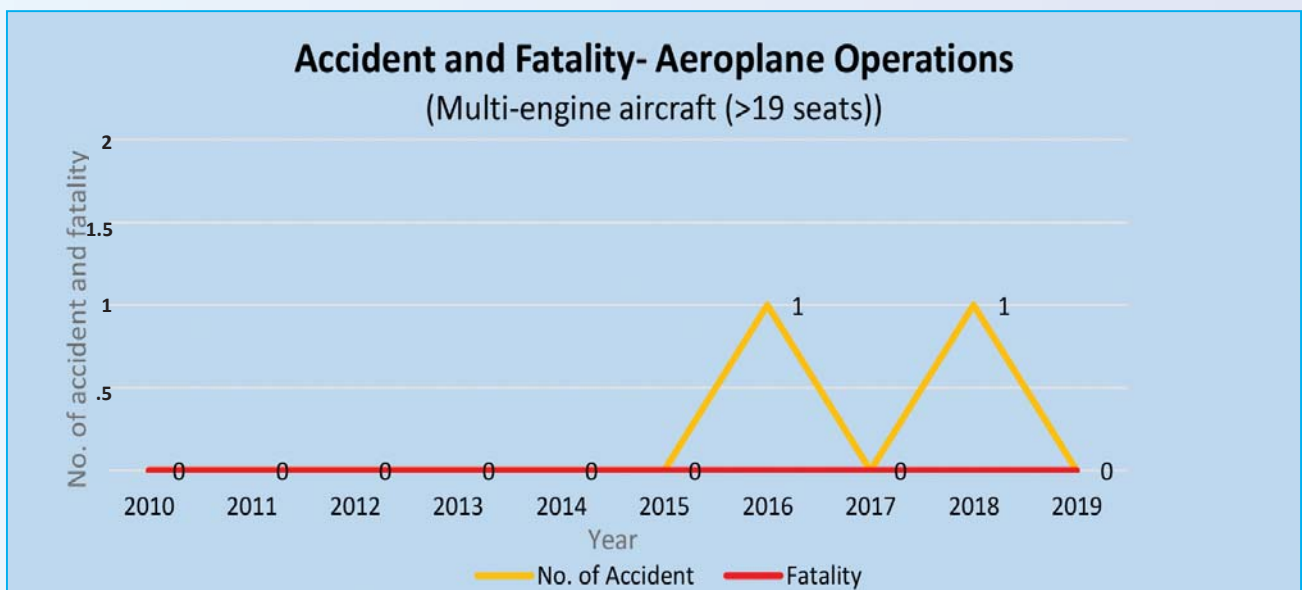
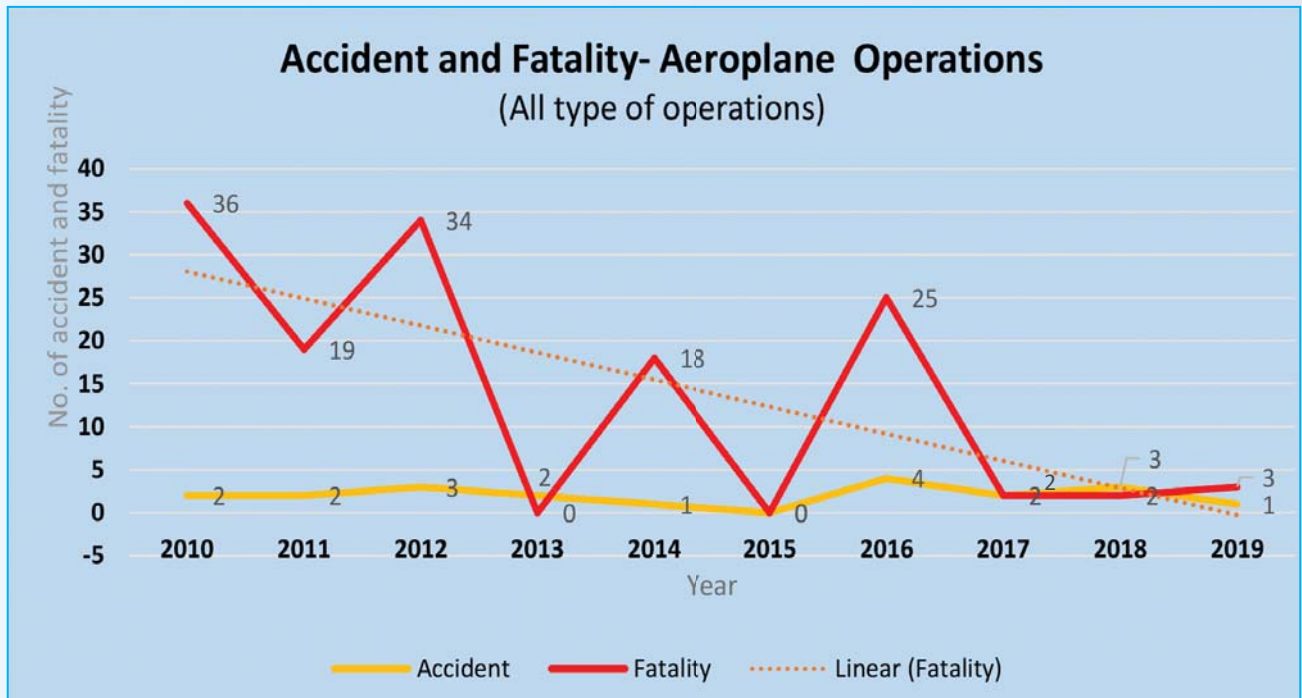
The domestic traffic movement in 2019 has decreased by 8.15 % compared to that in 2018. The chart below depicts the domestic traffic movement during the past 10 years.



Accident Statistics and Analysis (2010 to 2019)

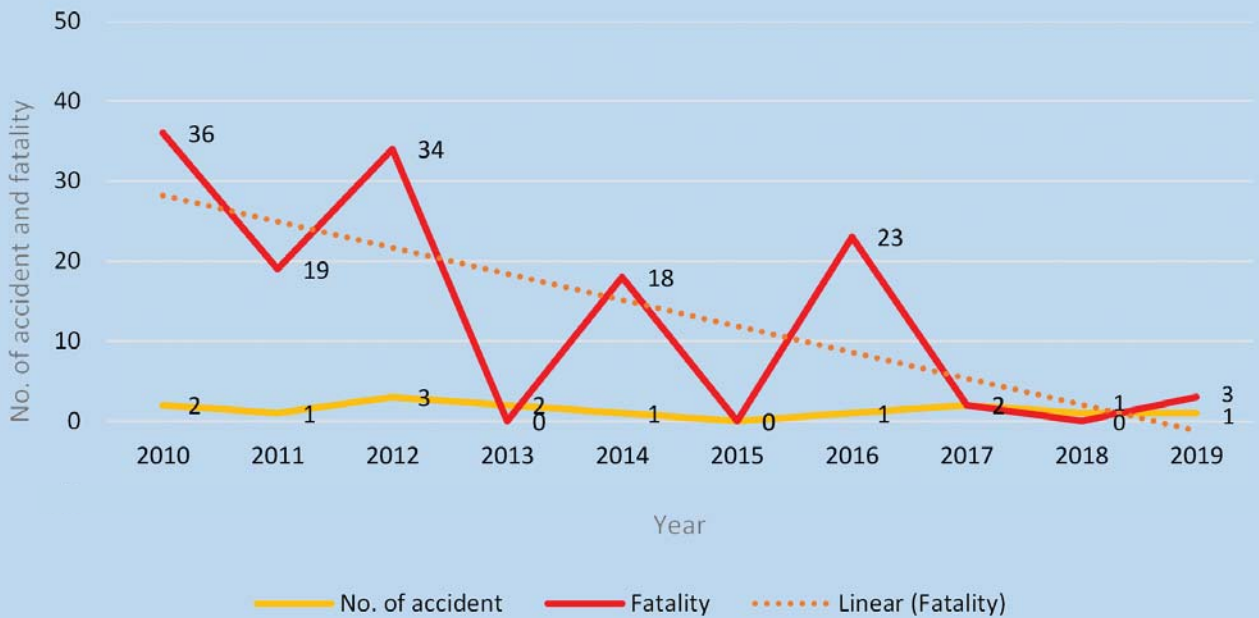
Accident and Fatality – Aeroplane operations

During the period of 2010-2019, the highest number of accidents in aeroplane operations was recorded in 2016 with occurrence of 4 accidents. The highest number of fatality was observed in 2010 when 36 lives were lost. 2012 followed with 34 fatalities. Aircraft with more than 19 seats witnessed no fatality with 2 accidents during those ten years. The trend of fatality in case of aircraft with capacity of 19 seats or less is seen continuously declining during the period.



Accident and Fatality- Aeroplane Operations

(Multi-engine aircraft (<=19 seats))



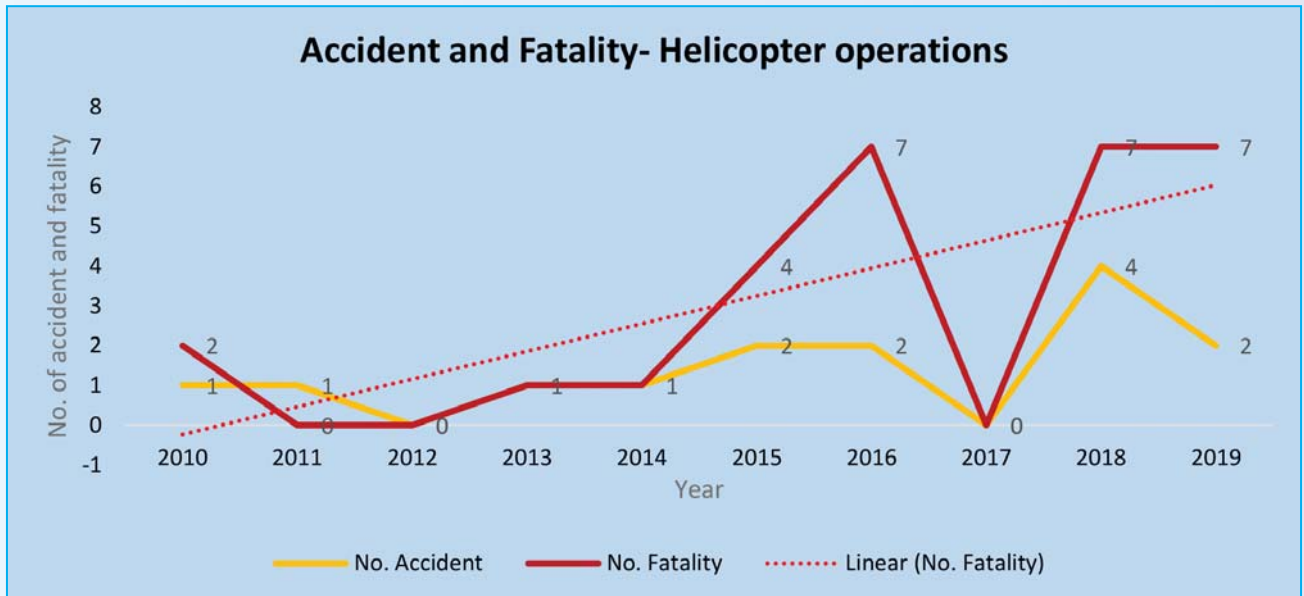
Accident and Fatality- Aeroplane Operations

(Single Engine aircraft)



Accident and Fatality - Helicopter Operations (2010 to 2019)

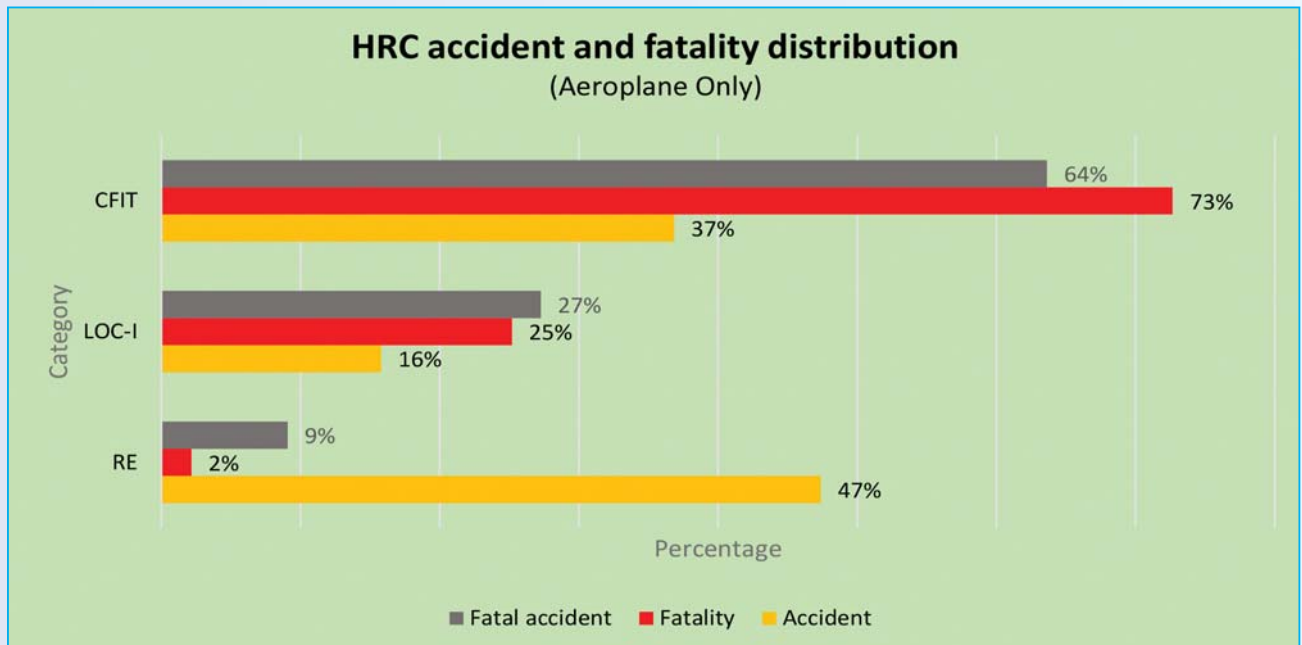
During the past ten years, there has been a continuous increase in helicopter operations. The abundance of remote topography in the country demands helicopter operations for logistic, rescue and relief purposes in mountainous terrain. Similarly, growth in tourism has also led to the increase in helicopter operations. Since such operation carries a higher risk factor considering the geography and weather, the accidents related to helicopter operations still remain a challenge in the field of Nepali aviation. The accident and fatality related to helicopter operations have undergone a rise in trend during 2010-2019.



High Risks Category (HRC) Accident and Fatality Overview (2010 to 2019)

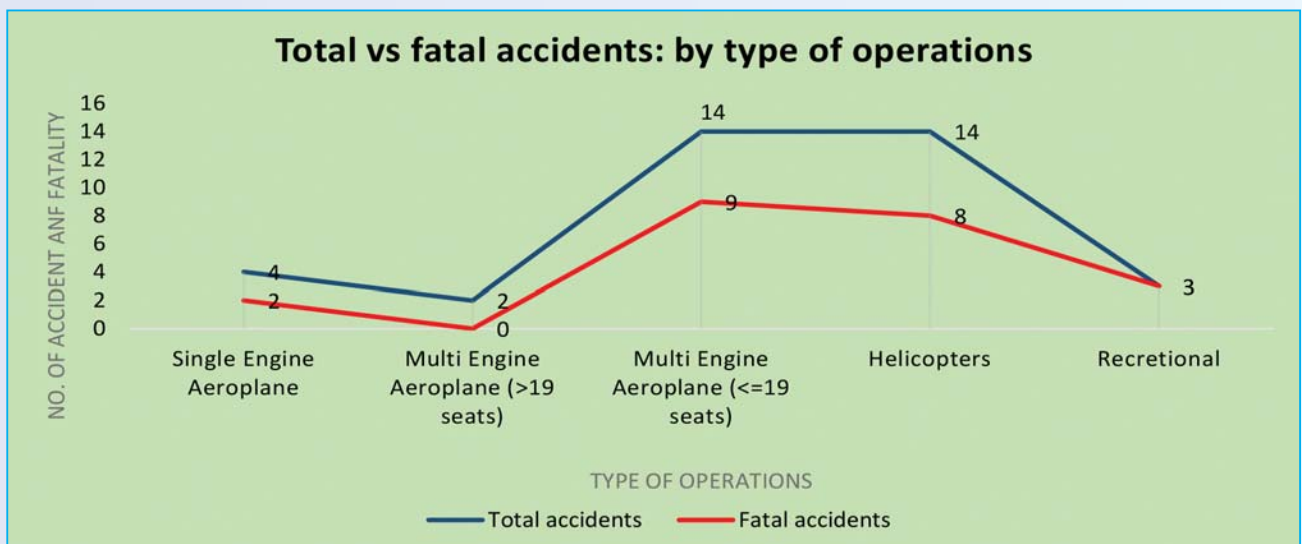
Analyzing the cause of accidents with fixed wing aircraft in the past ten years, top three high risk categories of accident were CFIT, LOCI and RE registering, respectively, 37%, 16% and 47% of accidents. The fatality related to the accident categories CFIT, LOCI and RE were 73%, 25% and 2% respectively. 64% of the fatal accidents fell under the category CFIT, 27% of fatal accidents were LOCI related and only 9% of all the fatal accidents fell under RE.

While reaching to the conclusion regarding the top three high risk categories of accidents, the basis of categorization was not solely the number of accidents or the number of fatality but a combination of factors such as number of accidents and fatal accidents together with the fatality percentage.



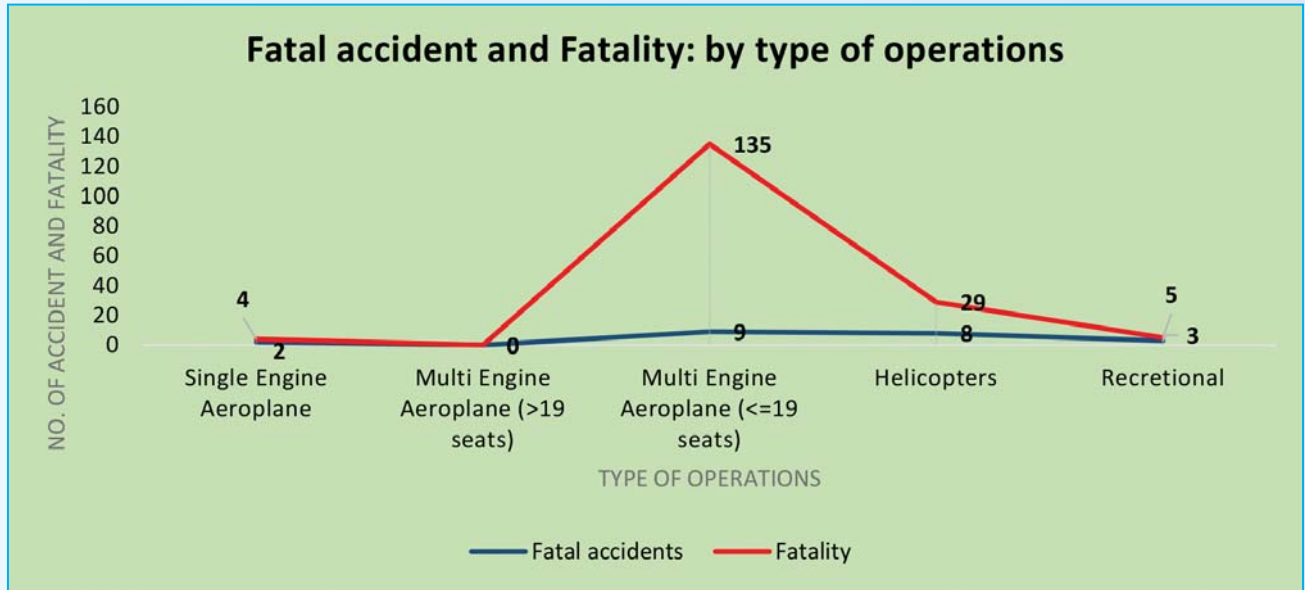
Total Accident and Fatality: by Type of Operations (2010 to 2019)

The number of accidents with multiengine aeroplane having seat capacity equal to or less than 19 was recorded to be 14 out of which 9 were fatal. Similarly single engine aeroplane witnessed 4 accidents of which 2 were fatal. Number accidents related to helicopter operations was recorded to be 14 including 8 fatal accidents. There was no fatal accident in multiengine aeroplane (with more than 19 seats) operations in the last 10 years.



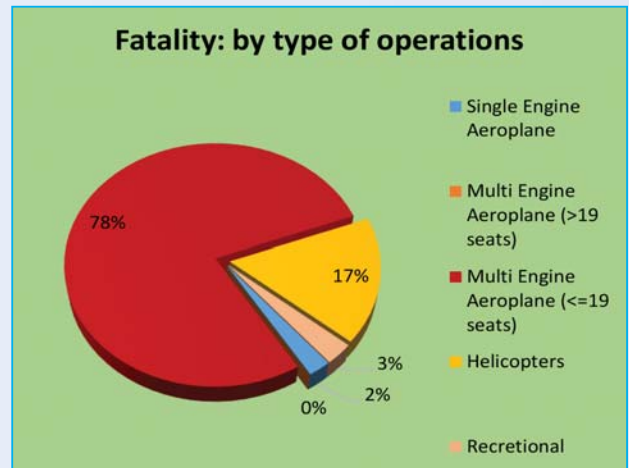
Fatal Accident and Fatality: by Type of Operations (2010 to 2019)

Higher number of fatal accidents as well as fatalities have been recorded to have occurred with the multiengine aircraft having capacity of 19 seats or less. Such aircraft have witnessed 9 accidents with 135 fatalities. The second in the list is helicopter operations with 8 fatal accidents and 29 fatalities.



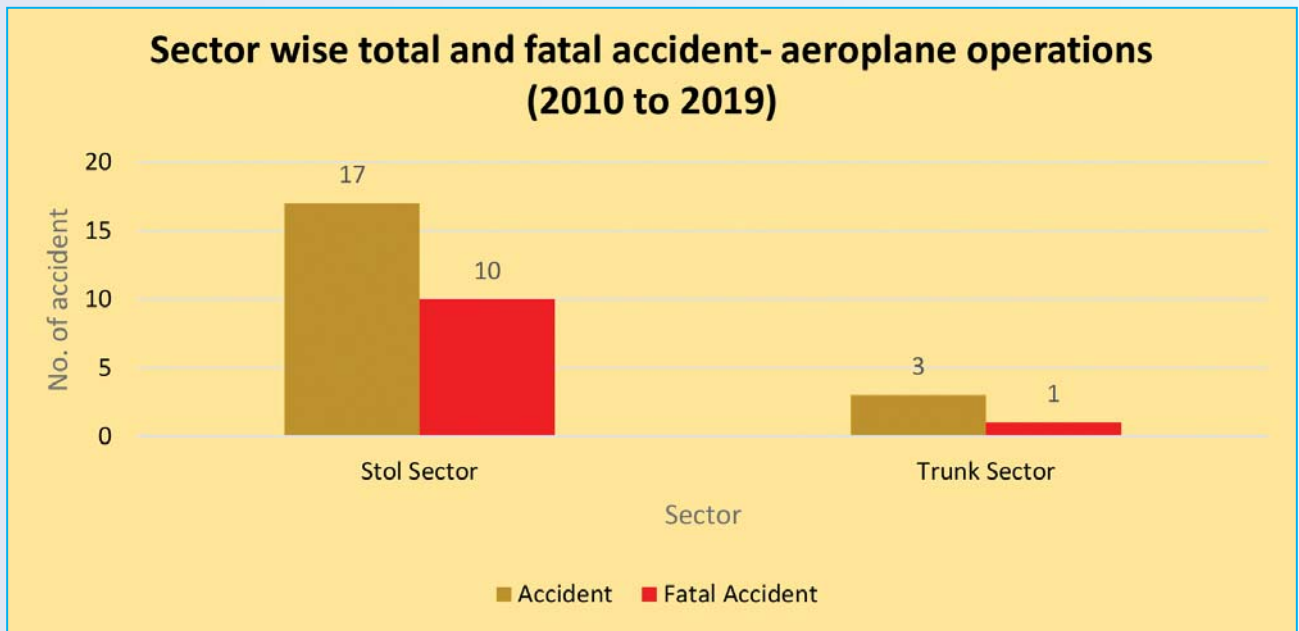
Fatality Percentage: by Type of Operations

The accidents related to multiengine aircraft (with 19 seats or less capacity) operations has attributed to 78% of total fatality in the last 10 years. Similarly, Helicopter operations and Single engine aeroplane operations attributed to 17 and 3% of total fatality to be second and third in the fatality register.



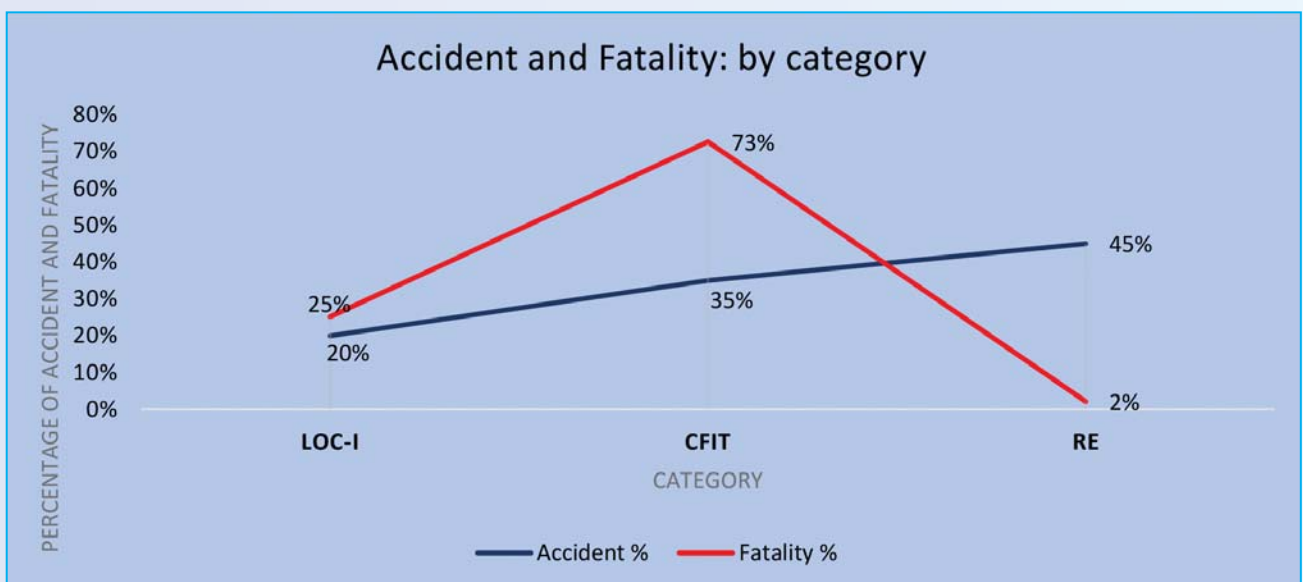
Sector Wise Total and Fatal Accident (2010 to 2019)- Aeroplane Operations

During the last ten years, aircraft operating in STOL sector have comparatively more number of accidents than the aircraft operating in trunk sector. Out of 20 accidents that occurred during the period, 17 occurred to the STOL sector aircraft rendering the STOL operation comparatively riskier. Out of 17 accidents, 8 were fatal whereas aircraft operating in trunk sector suffered only one fatal accident out of 3 accidents.



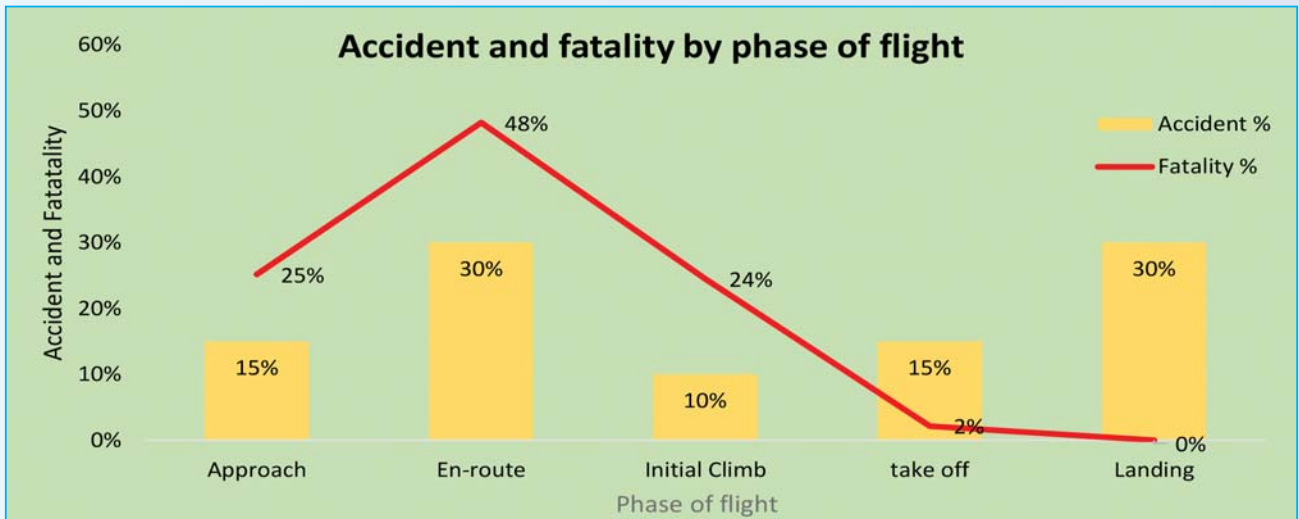
Accident and Fatality by Accident Category (2010 to 2019)- Aeroplane Operations

CFIT is registered as the most risky category of accident in Nepal because it has accounted for 73% of total fatalities with 35% of accidents in last 10 years. Among the three categories, RE is comparatively less risky since it has accounted for only 2% of fatality though the percentage of accident is more than that of LOC-I.



Accident and Fatality by Phase of Flight (2010 to 2019) - Aeroplane Operations

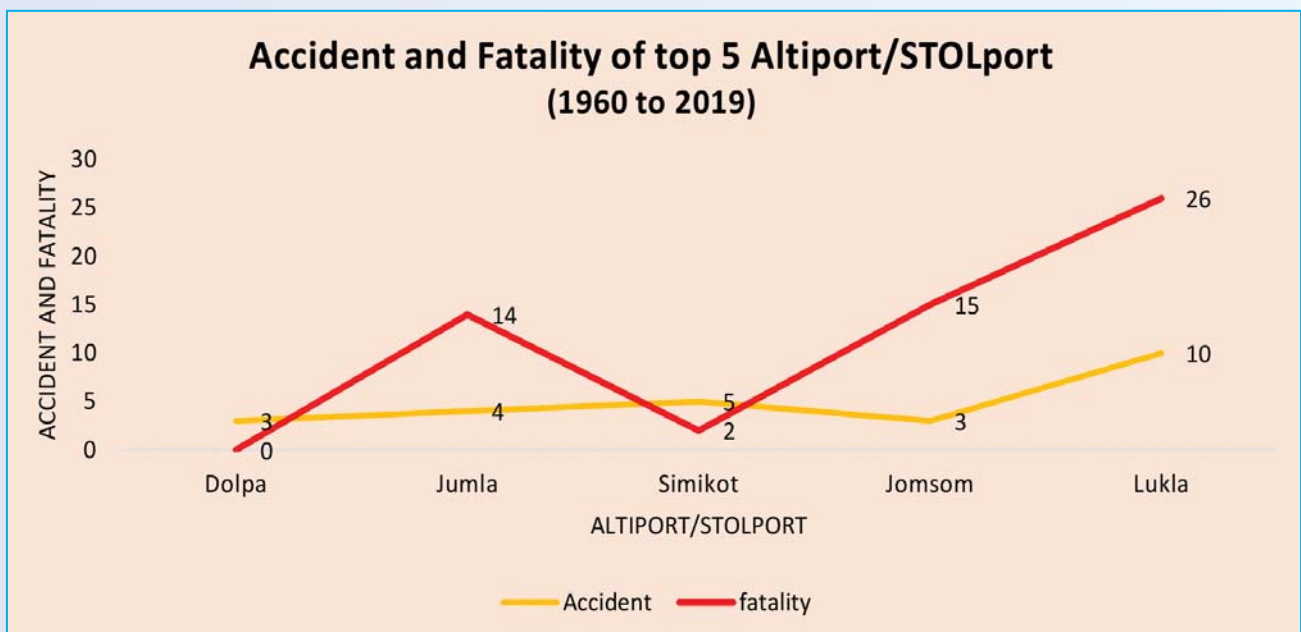
En-route phase of flight is the most risky phase in Nepal as 30% of accidents during the last 10 years that occurred in this phase of flight resulted in 48% of fatalities. Similarly, despite the same percentage of accidents as in En-route phase, Landing is less risky phase since it has not witnessed any fatality.



Accidents and Fatality in Altiports/STOLports

More than 50% of all airports are considered Altiports/STOLports. These are the airports wherein factors such as runway length and layout, obstacles in the departure or approach path render it impossible for the construction of a normal airport. Such airports are usually located in a valley between high mountains or even on high hills due to which their runway is too short, their runway slope too high or they need complicated procedures to operate. Meteorological condition is also one of the complications of Nepali aviation, especially at the Altiports/STOLports. With their landscape and associated meteorology, such airports have frequent meteorological problems associated with wind, clouds or rain which remain as one of the major challenges for operation.

With these complications, civil aviation sector in Nepal has witnessed many accidents in the Altiports/STOLports. Taking into consideration the number of accident and fatalities that resulted in the period between 1960 to 2019, top five altiports/STOLports that have been registered are Lukla, Jomsom, Simikot, Jumla and Dolpa.



Mandatory Occurrence Reporting (MOR)

Analyzing the data derived from the mandatory occurrence reporting in 2019, the significant seven areas posing risk to Nepali civil aviation sector for the year 2020, in order of severity, are RE (Runway Excursion), LOC-I (Loss of Control in Flight), BIRD (Bird Hazard), MAC (Mid Air Collision), SCF-NP (System Component Failure-Non Power Plant), NAV (Navigational Aids), and RAMP. Similarly, analysis of MORs taking into consideration the phase of flight of occurrences, top five risky phases have been calculated to be take off, en-route, approach, landing and standing phase respectively. With regards to the month witnessing occurrences, the seven risky months for the year 2020 have been observed to be April, February, January, September, October, May and November respectively. The data were analyzed based not only on the number of occurrences but also on the severity of their consequences.



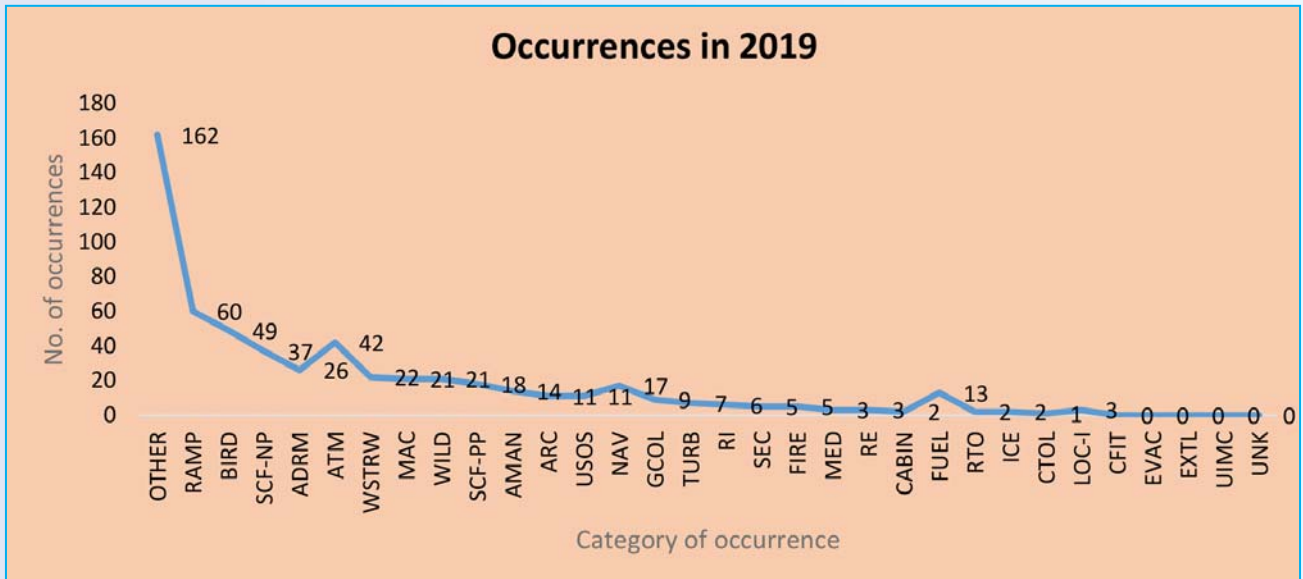
State Significant Safety Risks for 2020



RE= Runway Excursion
 LOC-I= Loss of Control – In flight
 MAC= Mid Air Collision
 SCF-NP= System Component Failure- Non Powerplant
 NAV= Navigation

Occurrence Reporting in 2019

Total 572 occurrences (MORs) were reported mandatorily in 2019 against 414 in 2018. Of these, maximum number of reports was related to 'RAMP'; 60 occurrences were related to ramp activities. Secondly, 49 occurrences were related to bird hazard, 42 were related to air traffic management and 37 reports spoke of aerodrome issues. Other prominent sectors related to which occurrences had been reported in 2019 include system component failure-non power plant, mid air collision, wild life hazard, abnormal manoeuvring etc.



In the above figure, 162 reports have fallen under the category "Others". This means, 162 of the occurrences could not be related to a particular category as defined in the CAST/ICAO Common Taxonomy Team (CICTT) Taxonomy.



The Taxonomy adopted for the purpose of deriving information related to mandatory and voluntary occurrences and incidents is the one prepared by CICTT. The CICTT includes experts from several air carriers, aircraft manufacturers, engine manufacturers, pilot associations, regulatory authorities, transportation safety boards, ICAO, and members from Canada, the European Union, France, Italy, Japan, the Netherlands, the United Kingdom, and the United States. The CICTT is chaired by a representative from ICAO and CAST. The taxonomy for occurrences has been given below:

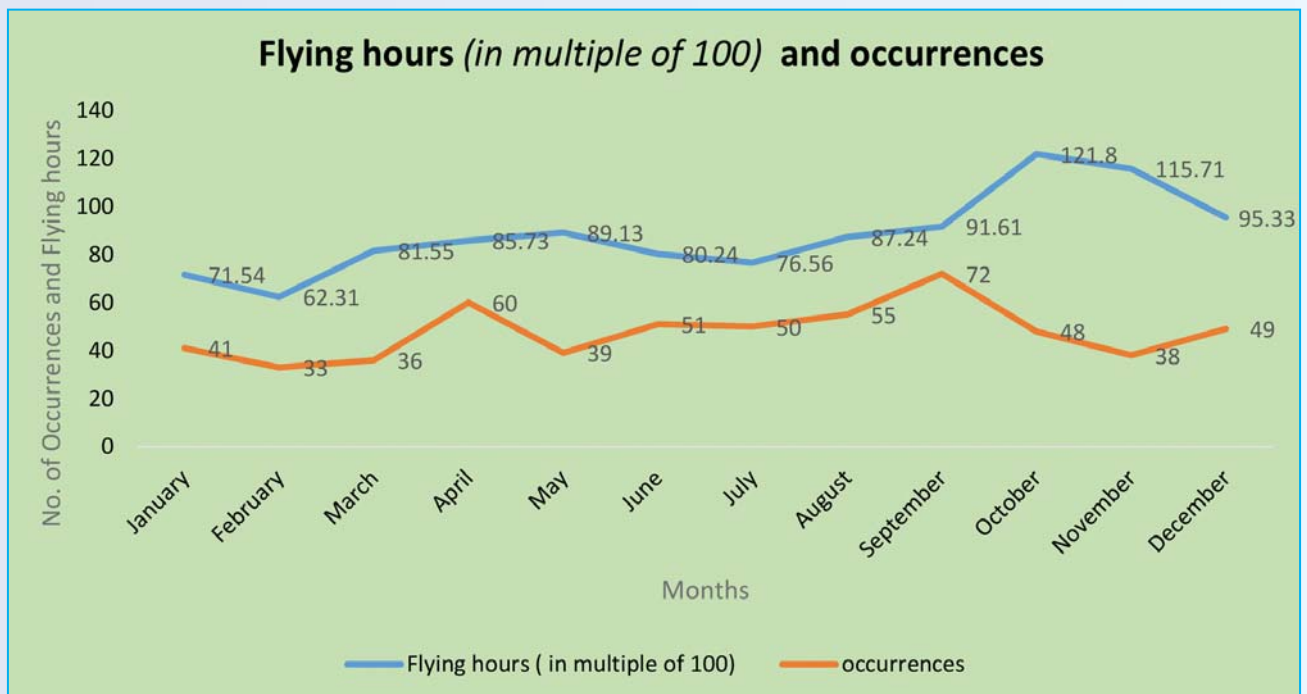
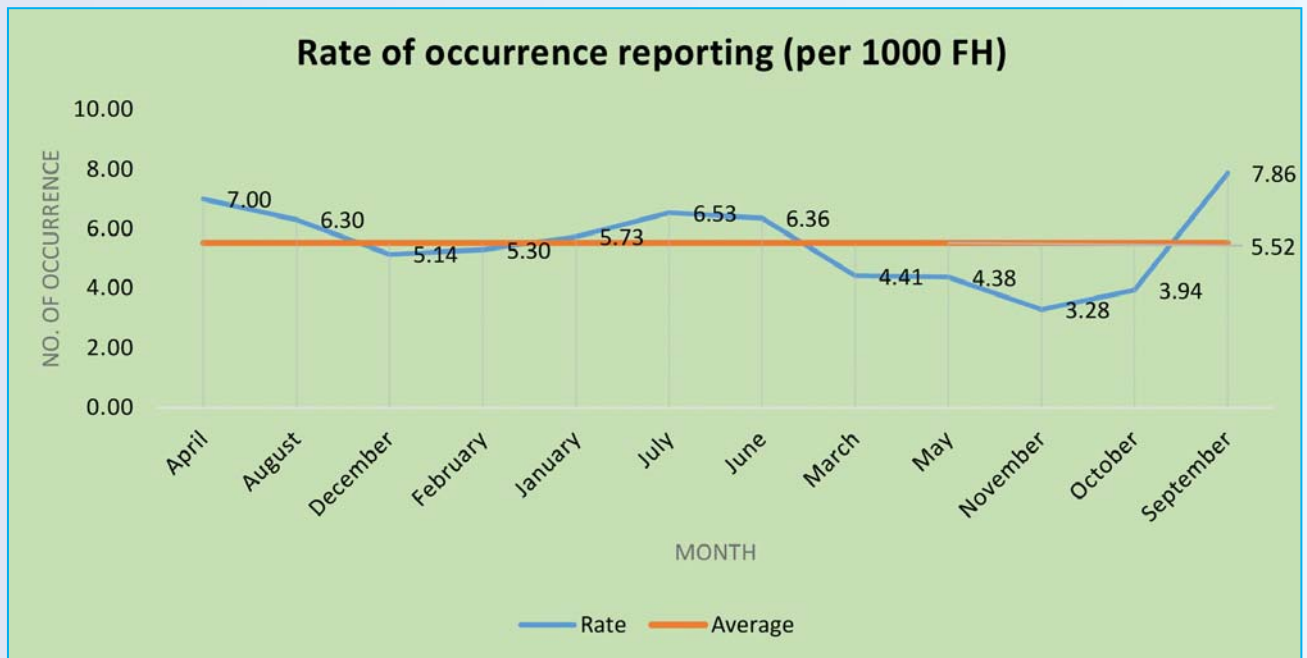
ICAO/CAST Taxonomy for Occurrences

AbnormalRunway Contact (ARC)	Medical (MED)
Abrupt Maneouver (AMAN)	RejectedTakeoff(RTO)
Aerodrome (ADRM)	Runwayexcursion (RE)
Airpox, Mid Air Collision (MAC)	Runway incursion (RI)
ATM/CNS(ATM)	Security related (SEC)
BirdStrike (BIRD)	System/ComponentFailure or Malfunction(SCF-NP)
Cabin Safety Events(CABIN)	System/ComponentFailure or Malfunction (PP)
Collisionwithobstacle(s) during take off andlanding (CTOL)	Turbulenceencounter(TURB)
Controlled flight into terrain(CFIT)	Undershoot/overshoot (USOS)
Evacuation(EVAC)	unintended flight inIMC (UIMC)
External Load Related(EXTL)	unknown or undetermined (UNK)
Fire/Smoke (FIRE)	Wildlife(WILD)
FuelRelated(FUEL)	WindshearorThunderstorm(WSTRW)
Ground Collision (GCOL)	Ground Injury (GND)
GroundHandling (Ramp)	



Rate of Occurrence

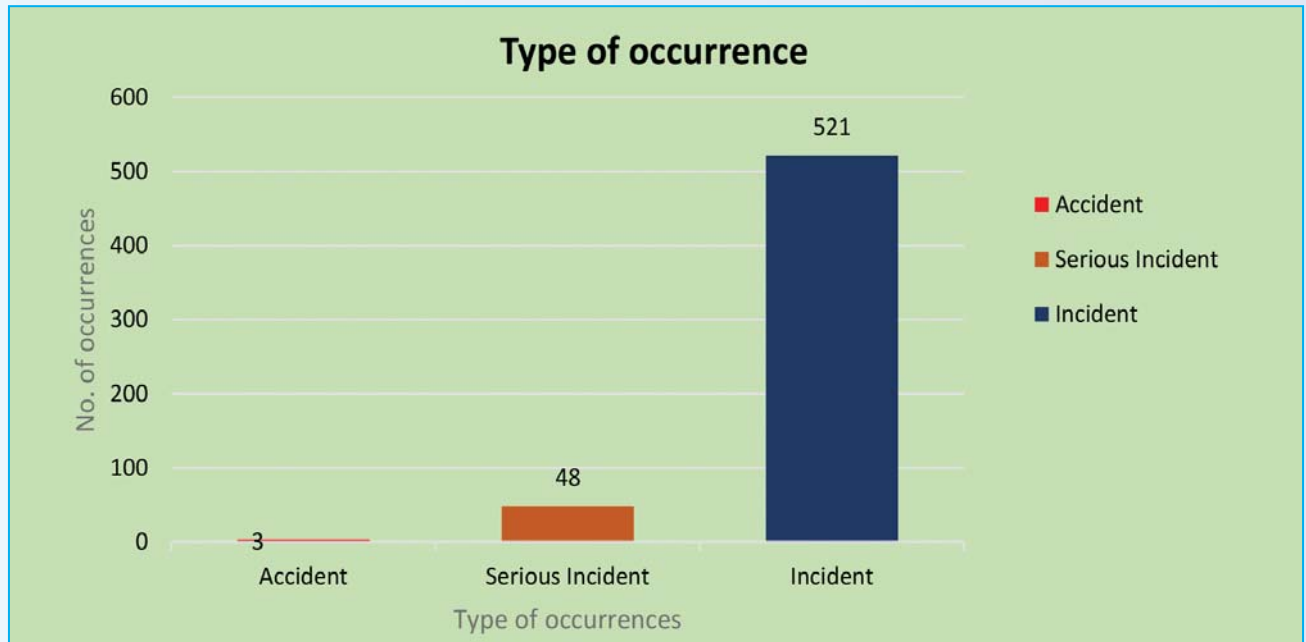
Considering the rate of occurrence reporting per 1000 Flying Hours, the highest rate was observed in the month of September with 7.86 reports made per 1000 flying hour. Similarly, the rate of reporting in April was 7. The lowest rate of reporting was observed in the month of November. This implies that the number of occurrences that occurred in September was the highest.



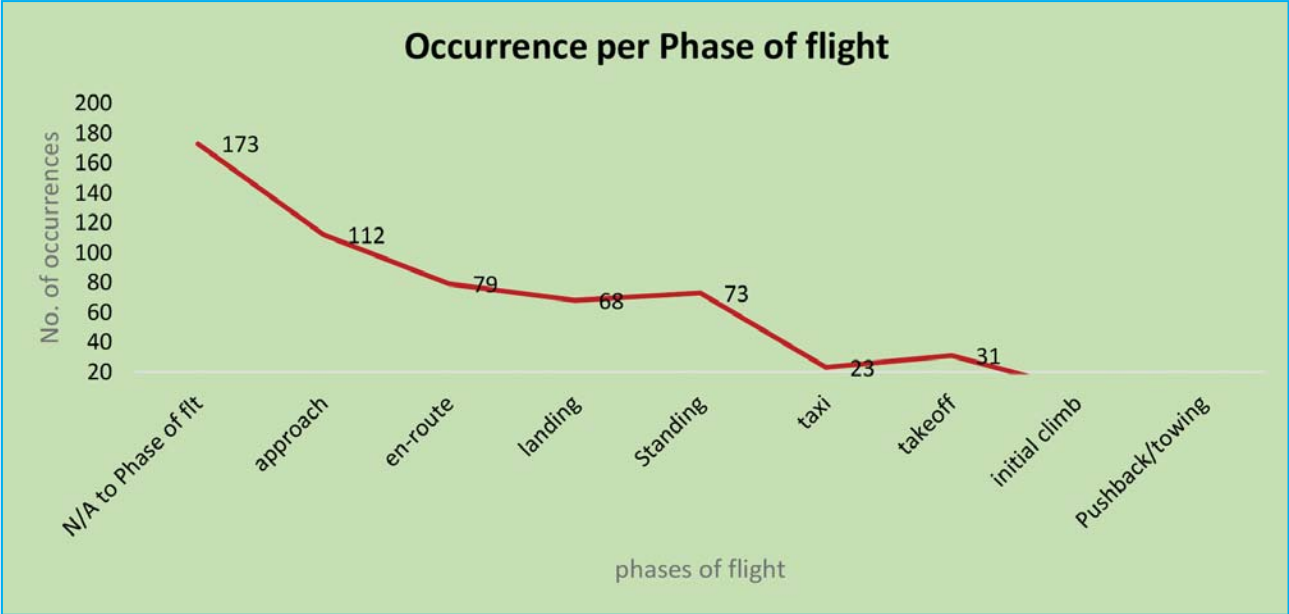
Comparative presentation of flying hours, expressed in multiple of hundreds, and the number of occurrences has been made in the above chart.

Type of Occurrence

Studying the type of occurrences based on their severity, only three accidents have occurred in the year 2019. 48 serious incidents were registered in 2019. Similarly, 521 incidents took place throughout 2019.

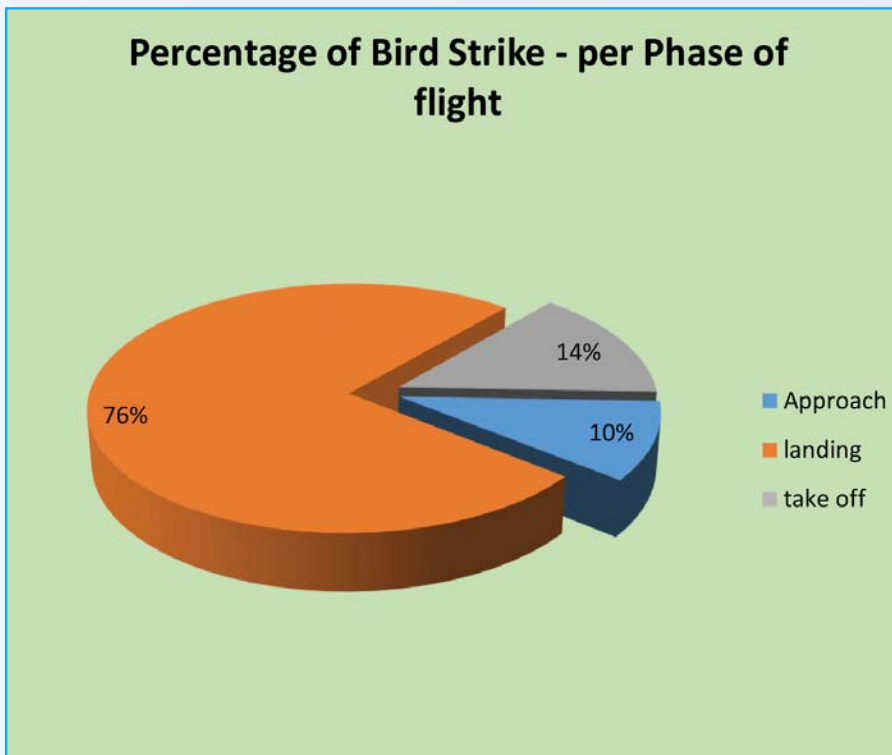


Analysing the occurrences registered in the year 2019 against the phase of flight of occurrences, 112 occurrences took place in approach phase depicting the approach phase as the riskier one based on number of occurrences. However, the overall analysis for reaching a conclusion regarding the most risky phase of flight has taken into consideration the combined values of accidents and occurrences as well as their severity.



Wildlife Strike in Nepal

Of all the operational significant risks as identified by Nepal in the Nepal Aviation Safety Plan (NASP), 2018-2022, wildlife is a peculiar one in the sense that it is more of Nepal specific risk category. GASP and RASP have still not recognized wildlife strike as one of the operational safety risks of the world or the Asia Pacific Region. As wild life strike is a prominent area of concern in the South Asian Region, voices from this region were raised in the 13th, 14th, and 15th meetings of the APRAST (Asia Pacific Regional Aviation Safety Team) for the need of including Wild life Strike as the operational safety risk of Asia Pacific Region in the RASP APAC (Regional Aviation Safety Plan, Asia Pacific Region). In this regard, APRAST has formed a Safety Reporting Programme Working Group (SRPWG) for the purpose of studying in this area and identify the safety enhancement initiatives (SEIs) in the area of wildlife.

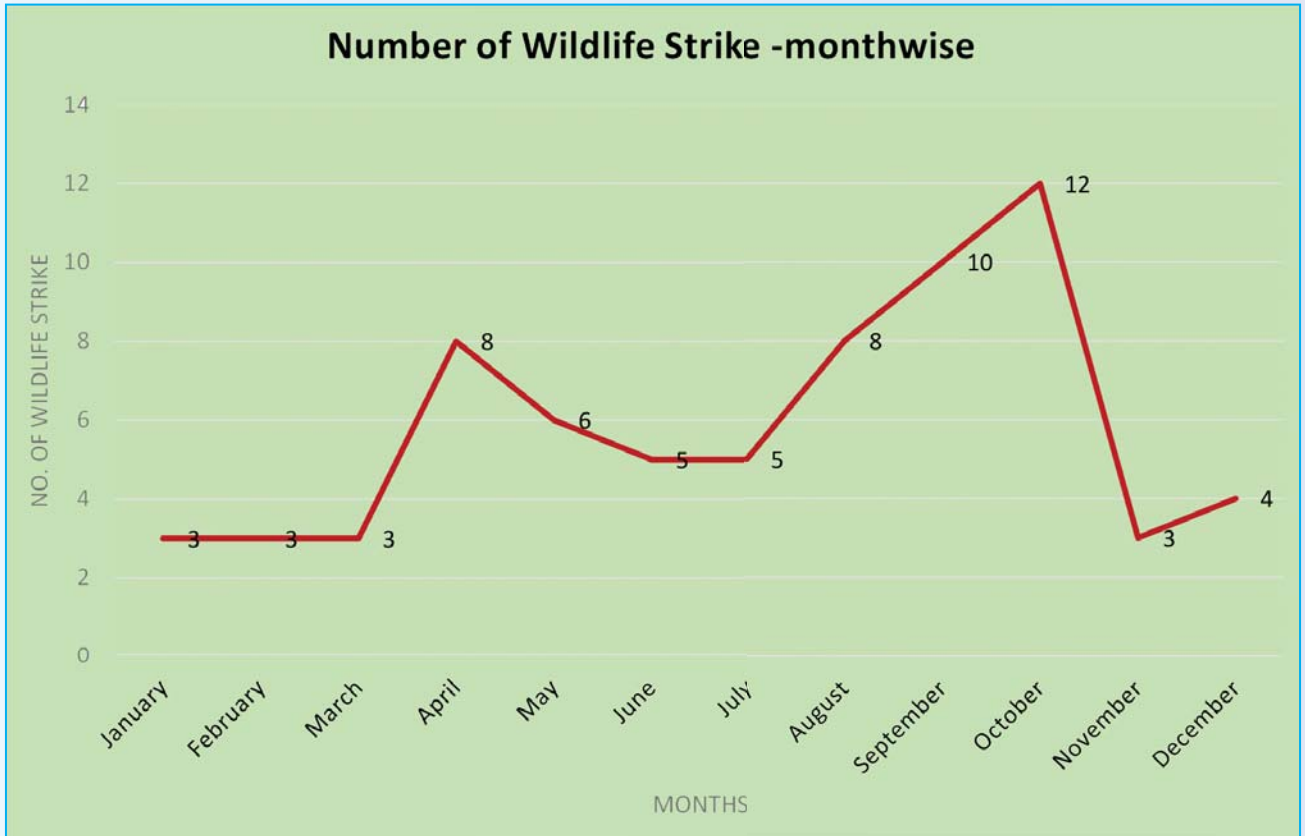


The study related to wildlife (animal and bird) hazard and occurrences have been presented in these six charts.

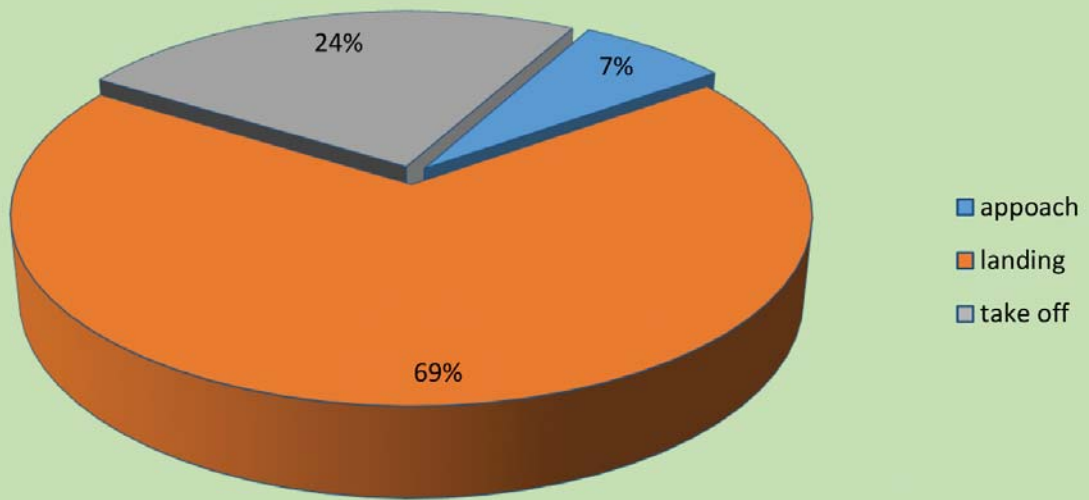
Number of Animal Strike - monthwise



Wildlife Strike (Combination of Bird and Animal Strike)



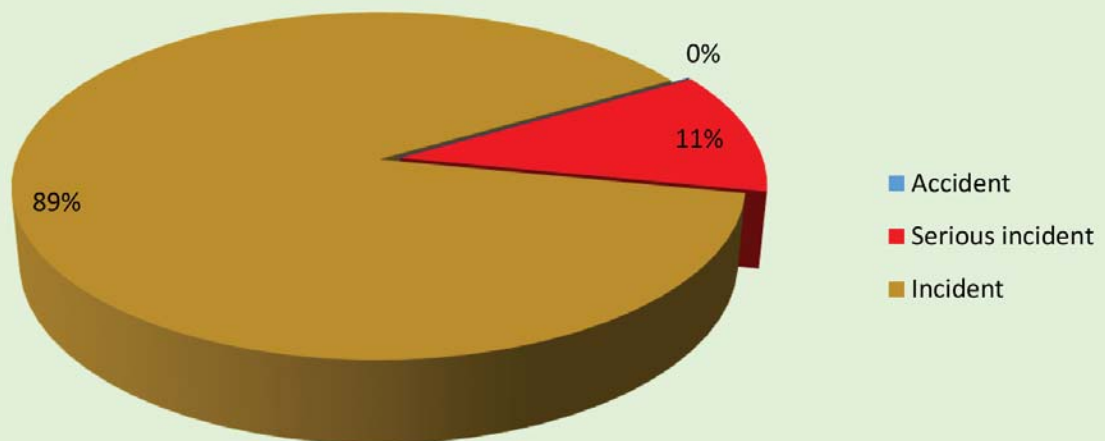
Percentage of Wildlife Strike- per Phase of flight



Wildlife Strike: Accident, Serious incidents and Incidents

(8 serious bird strike, no serious animal strike)

Type (severity) of wildlife Strike

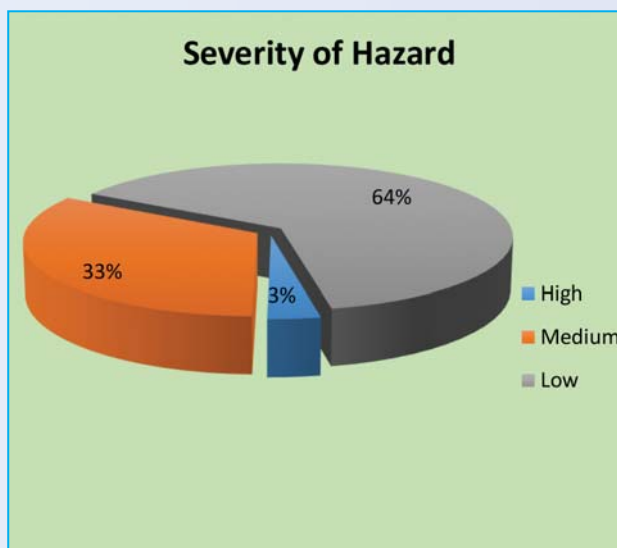


Voluntary Information Reporting

Hazard Reported in 2019

One of the proactive measures of collection of safety information has been the hazard reporting system. The approaches such as introduction of SMS audits, vigorous safety promotion and collaboration with stakeholders in SMS matters have played a significant role in spreading awareness in a deeper way. As a result, 819 hazards have been reported in the year 2019 against 512 in 2018.

45% of the hazards reported in 2019 were related to "Organization". Human and technical hazards both were reported in equal numbers resulting in each covering 19% of total reports. The remaining 17% of the hazard reports were concerned with environment.



Based on their severity, the total number of hazard reports was classified as high, medium and low consequence hazards. In the year 2019, 64% of the reports received were low consequence hazards while 3% of those were considered to be high consequence hazards.



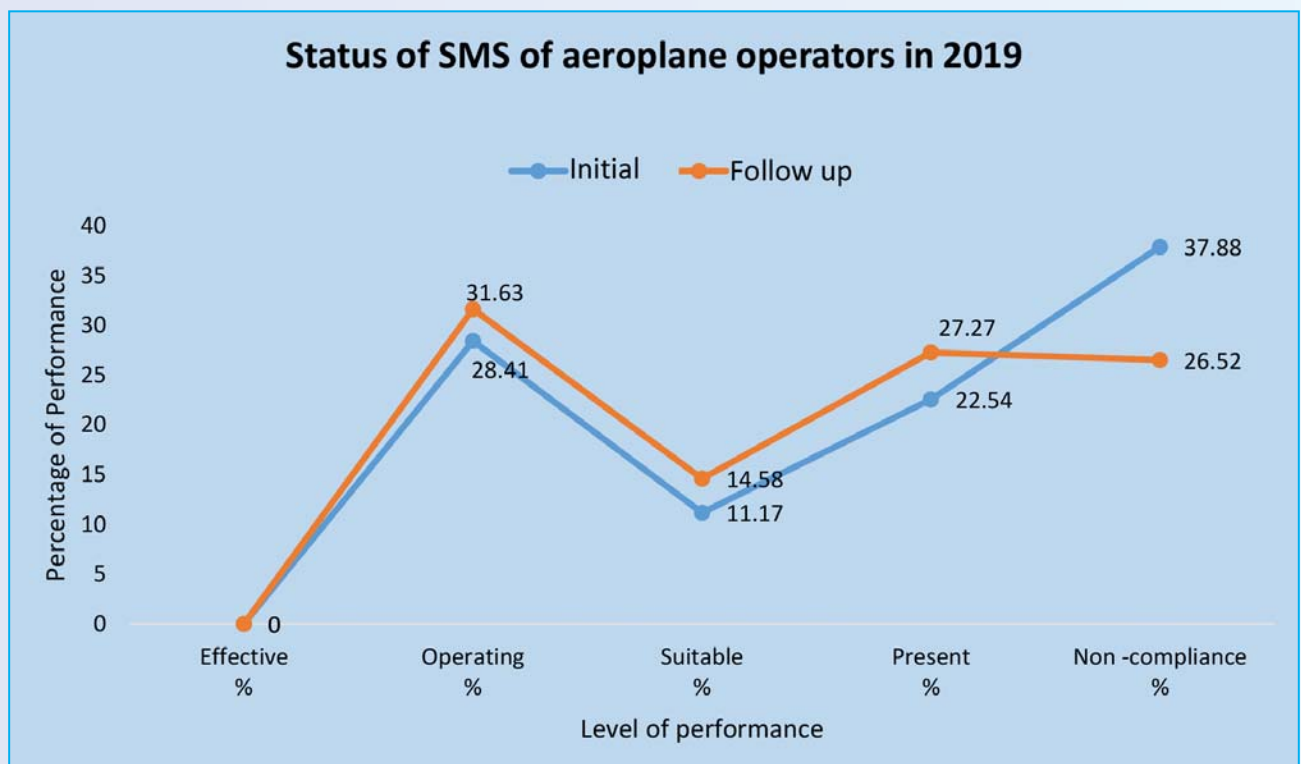
Status of SMS Performance in 2019

SMS performance of the operators was analysed basically on their SMS audit reports. The reports were prepared such that compliance of an activity by an operator was further categorized as either present (establishment in documents only) or suitable (suitable based on the size, nature and complexity of the organization), operating (output is being generated) or effective (desired outcome is being generated). Comparing the performance of an operator in initial and follow up audit, the SMS performances of the operators was measured.

SMS Performance by Aeorplane Operators

Non compliance identified in the initial audit of the aeroplane operators in 2019 was 38 % out of which 28.9% were closed in the follow up audit thus reducing the non compliance to 27%. in other words improvement in addressing the non compliant finding was 28.9%.

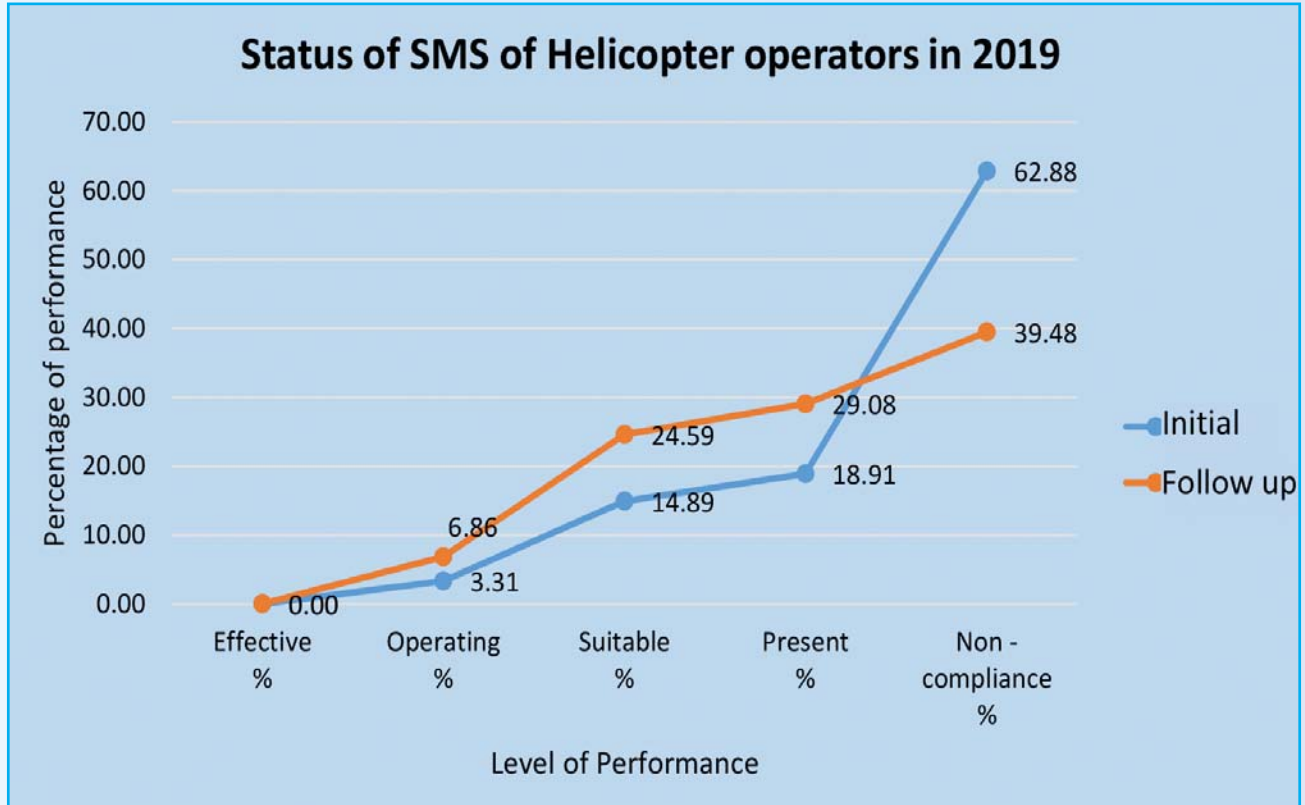
Improvement was also observed in each of the level of compliant activity during the follow up audit against the level in the initial audit.



SMS Performance by Helicopter Operators.

Non-compliance identified in the initial audit of the helicopter operators in 2019 was 63%. Out of which 38.1% were closed in the follow up audit thus reducing the non compliance to 39%. In other words improvement in addressing the non-compliant findings was 38.1%.

As in the case of aeroplane operations, improvement was observed in each of the level of compliant activity during the follow up audit against the level in the initial audit.



Present: There is evidence that the 'marker' is clearly visible and is documented within the organisation's SMS or MS Documentation.

Suitable: The marker is suitable based on the size, nature, complexity and the inherent risk in the activity

Operating: There is evidence that the marker is in use and an output is being produced

Effective: There is evidence that the marker is effectively achieving the desired outcome and has a positive safety impact

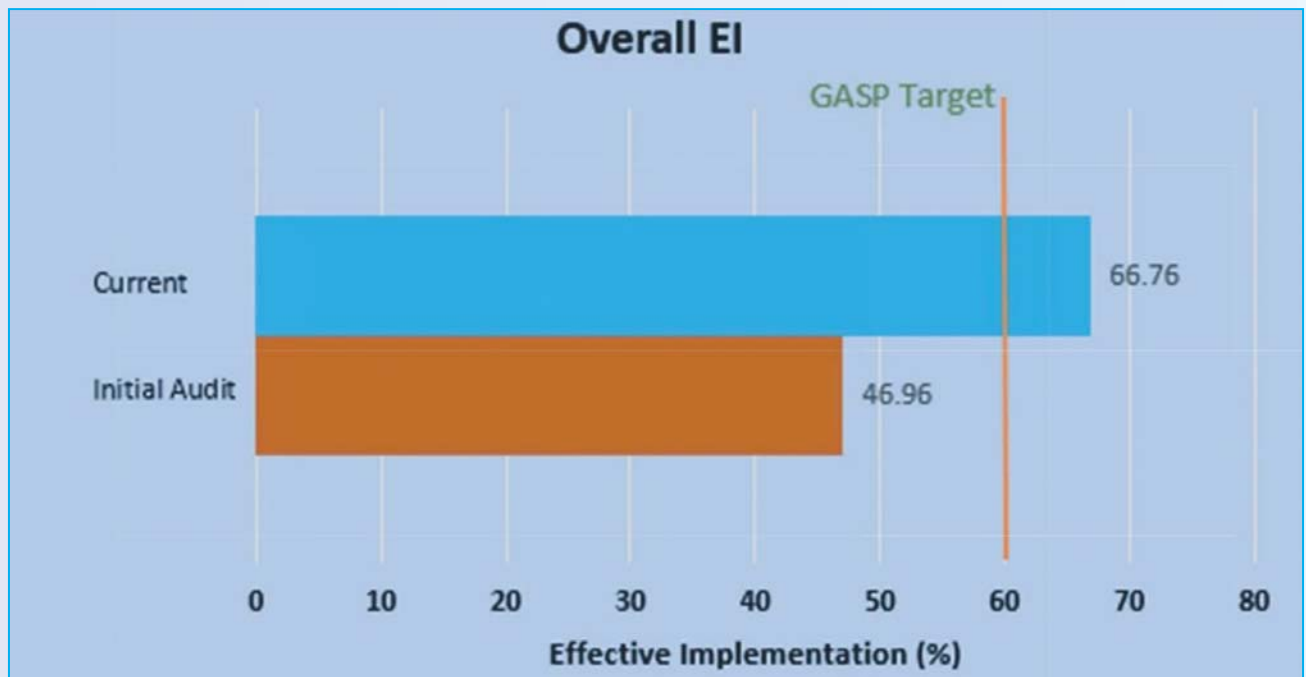


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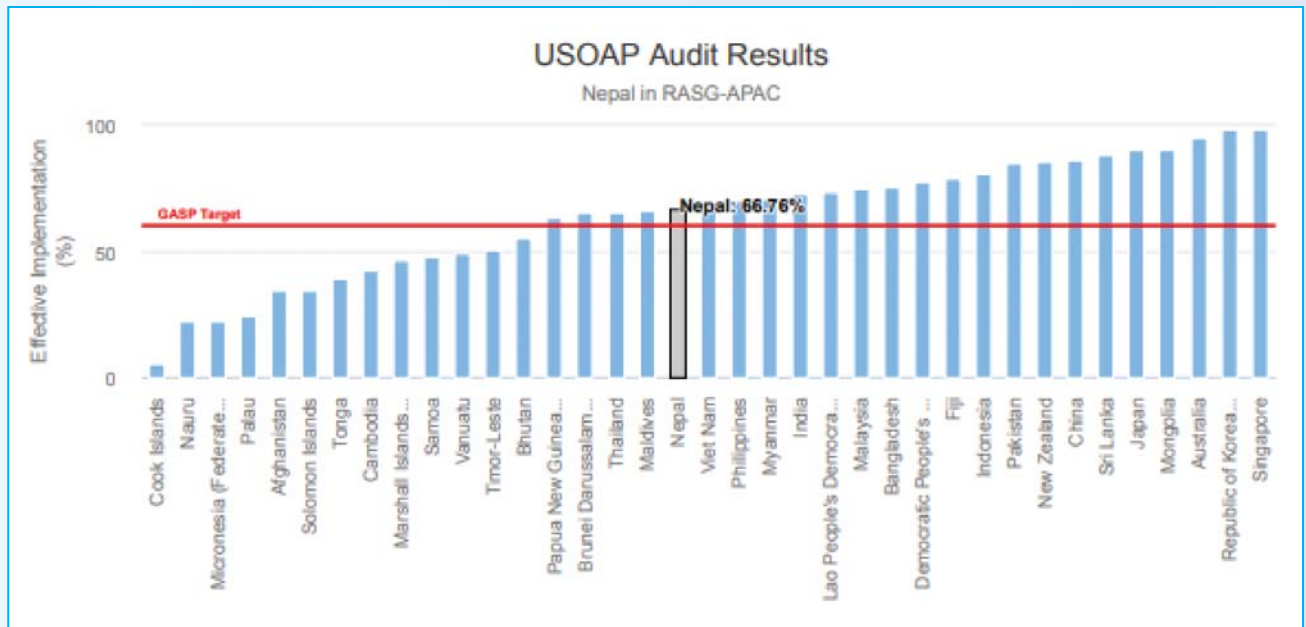
Safety Oversight Information

Overall Effective Implementation:

The Effective Implementation of Nepal in the last USOAP audit is 66.76% which is above the ICAO global benchmark of 60% set in Global Aviation Safety Plan (GASP). Nepal has made a significant progress in its oversight capability since the initial audit in 2009.

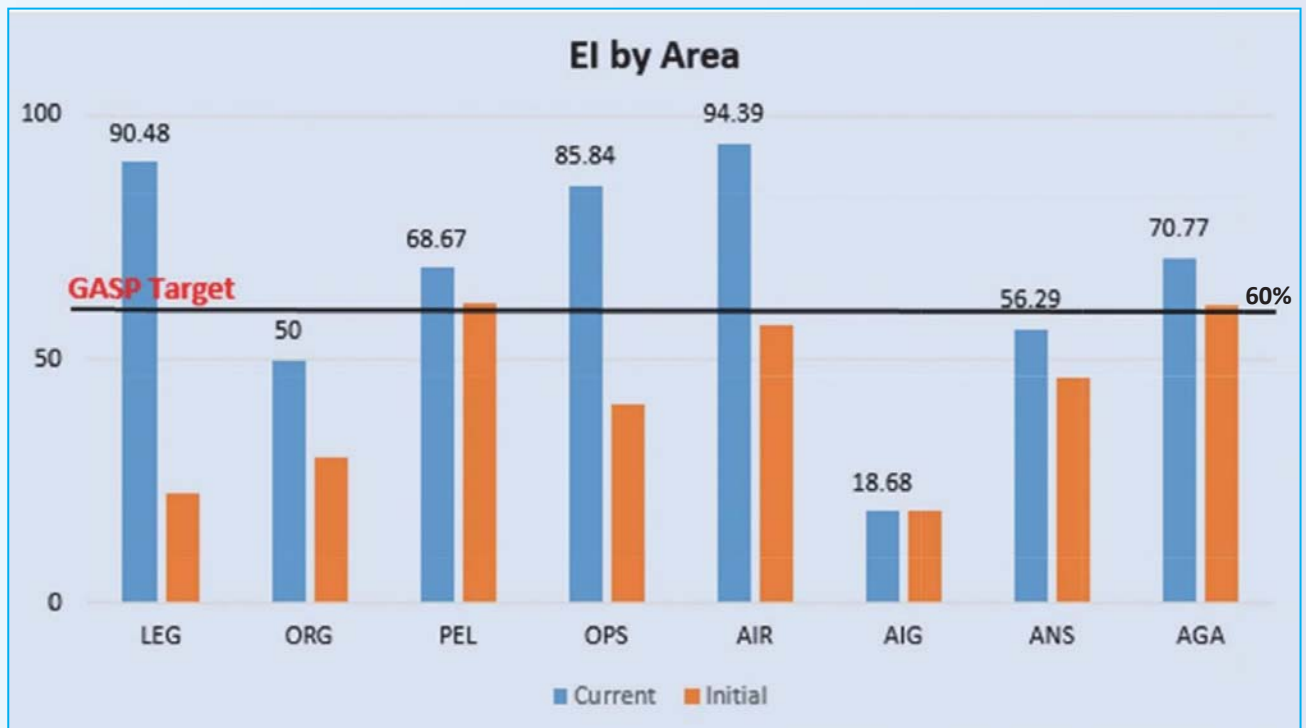


Nepal is ranked 20th in RASG-APAC with respect to overall effective implementation within this group. In this region, 63.89% have reached the ICAO GASP target of 60% with regional average of 63.26. Nepal rates above the regional average of RASG-APAC.

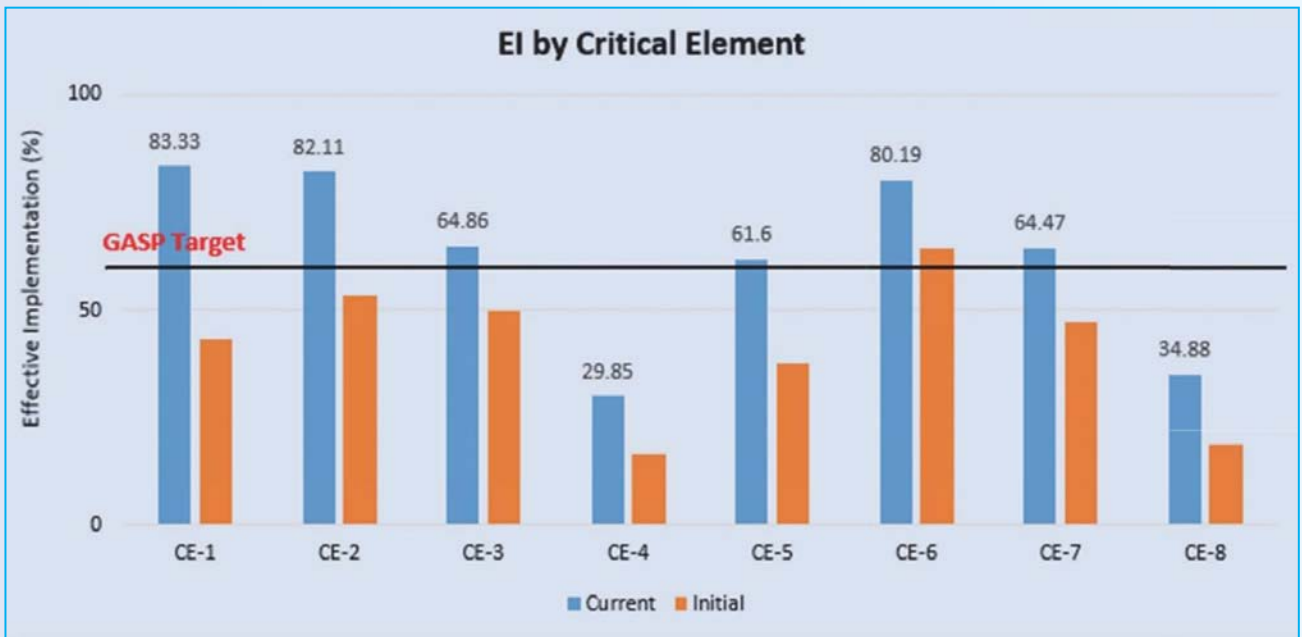


Effective Implementation by Area

Currently, Nepal has 5 areas and 6 critical elements above the GASP target of 60% EI.



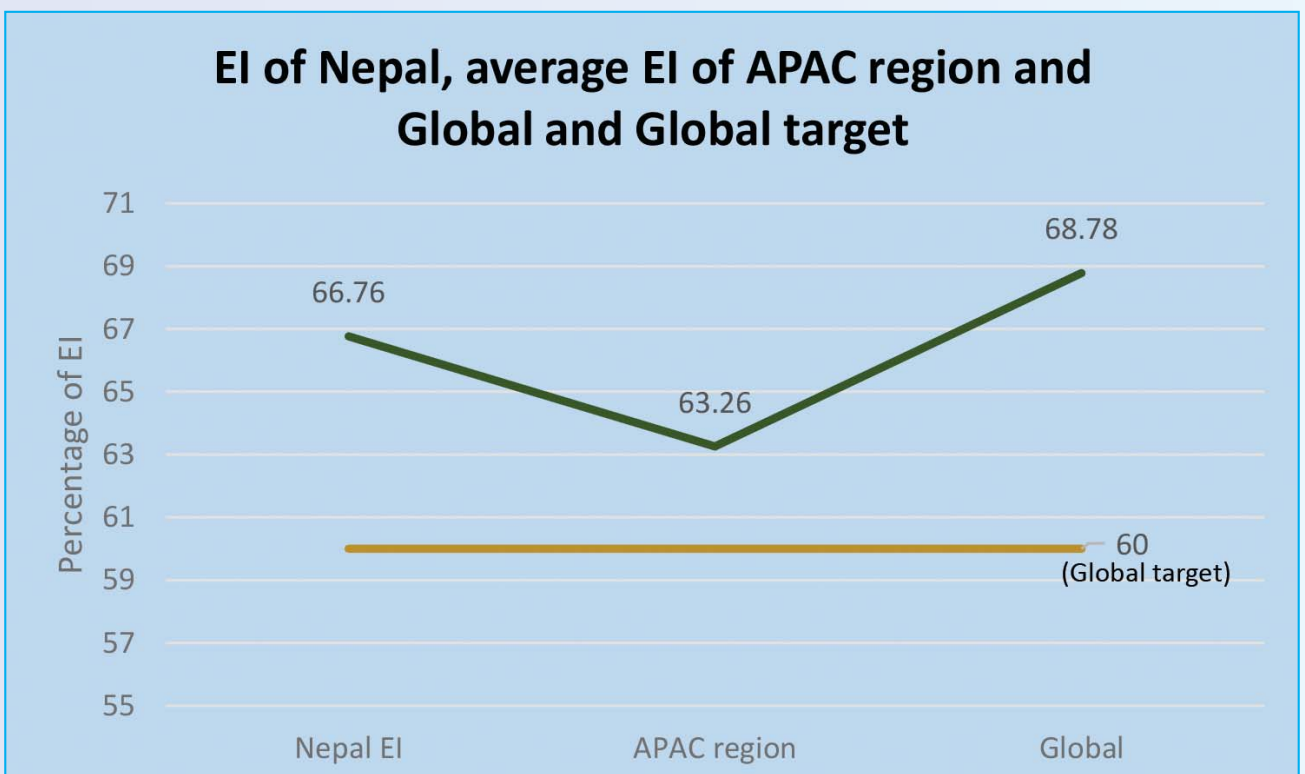
Effective Implementation by Critical Elements



The strongest area of Nepal is, thus, AIR with 94.39% of effective implementation. AIG is the area which has not been audited since 2009.

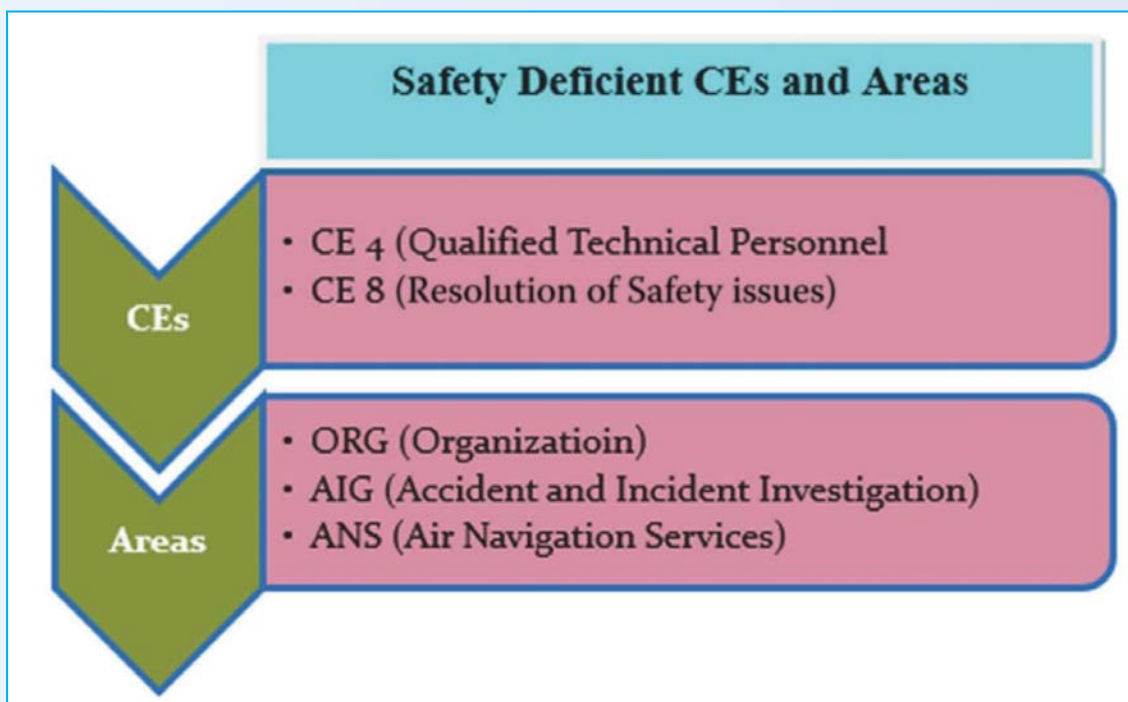
With regards to critical elements, CE1, CE2 and CE6 stand as stronger elements. CE4 and CE8 are the weakest elements.

Currently Nepal's EI (66.76%) is higher than APAC average EI(63.26%) and ICAO target(60%) but close to Global average (68.78% as of 6 August 2020).



Safety Deficient CEs and Areas

USOAP 2017 identified CE4 and CE8 as safety deficient critical elements and ORG, AIG and ANS were identified as safety deficient areas in the state oversight capability system.



	LEG	ORG	PEL	OPS	AIR	AIG	ANS	AGA
CE-1		1				4		
CE-2	2		3	1		7	2	2
CE-3		4	1	1	1	7	10	2
CE-4			4	4	1	6	29	3
CE-5			1		1	39	3	4
CE-6			10	4	1		17	10
CE-7			4	4	1		8	10
CE-8			3	2	1	11	4	7

Nepal currently has 240 open USOAP protocol findings. The highest number of protocol findings (39) is related to Technical Guidance, Tools and the Provision of Safety-Critical Information (CE-5) in the area of Accident Investigation (AIG).

Protocol findings by Area and Critical Element intersection

Safety Index by Areas

Safety Indexes provide a risk-based prioritization of operational, air navigation and support related USOAP areas. A State with a positive safety index would be considered to have sufficient regulatory controls in place to cover its existing traffic volume. A State with a negative safety index would be considered to have an insufficient oversight system taking into consideration its traffic volume.

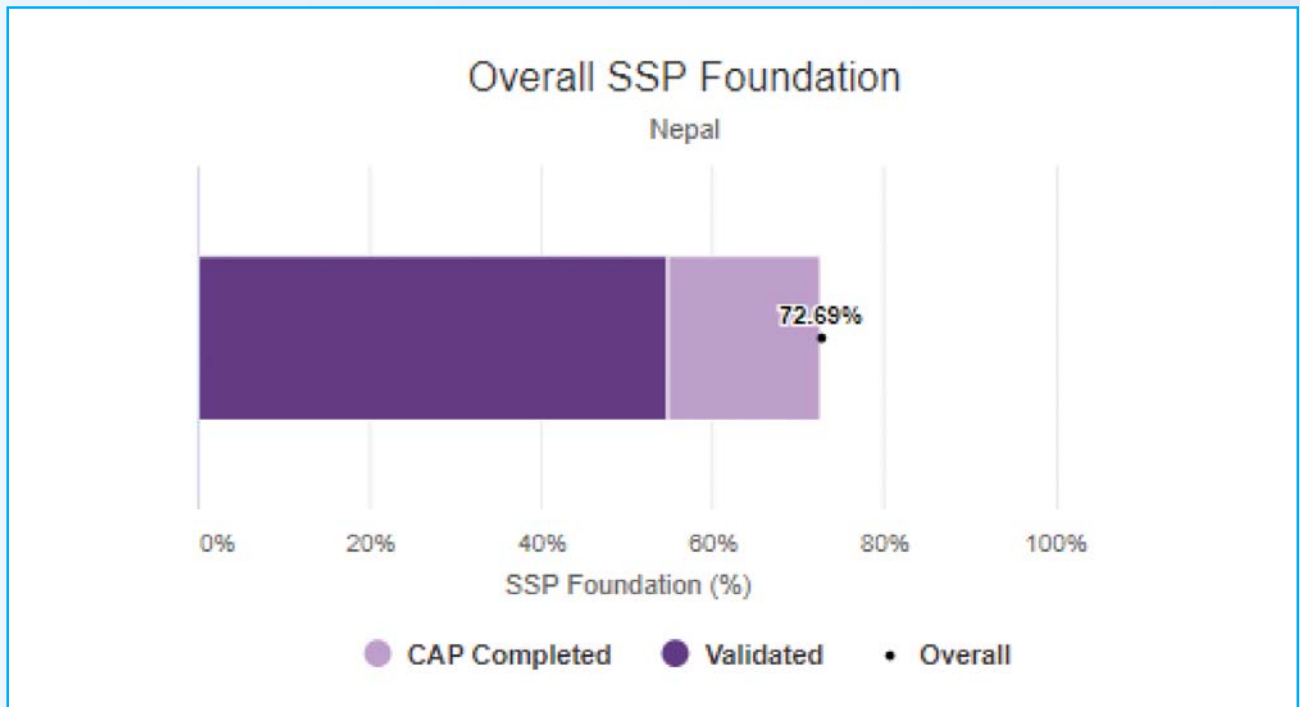
Nepal has a positive Safety index in Operations (OPS, AIR and PEL) and Air Navigation (ANS and AGA) whereas negative index in Support area. The Support area includes LEG, ORG and AIG areas.



SSP Foundation

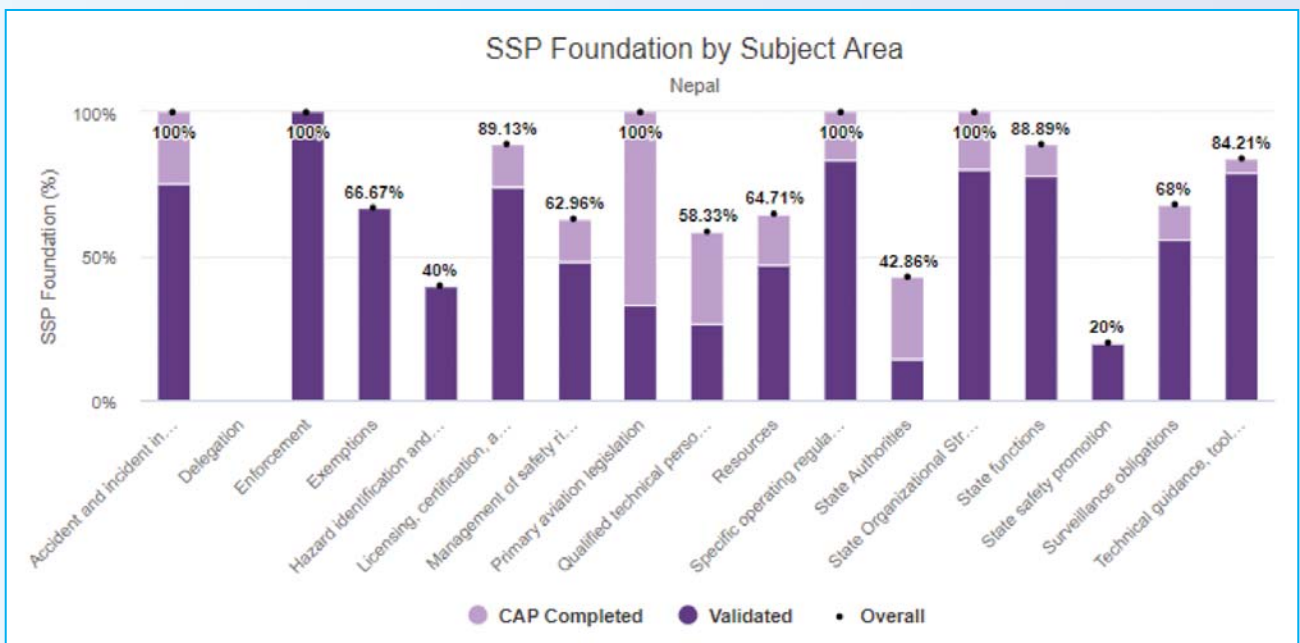
The SSP Foundation indicator is calculated, as the percentage of a sub-set of 299USOAP Protocol Questions considered as the foundation for an SSP implementation.

Currently Nepal has overall (Validated and CAP completed) 72.69% of SSP foundation implementation.



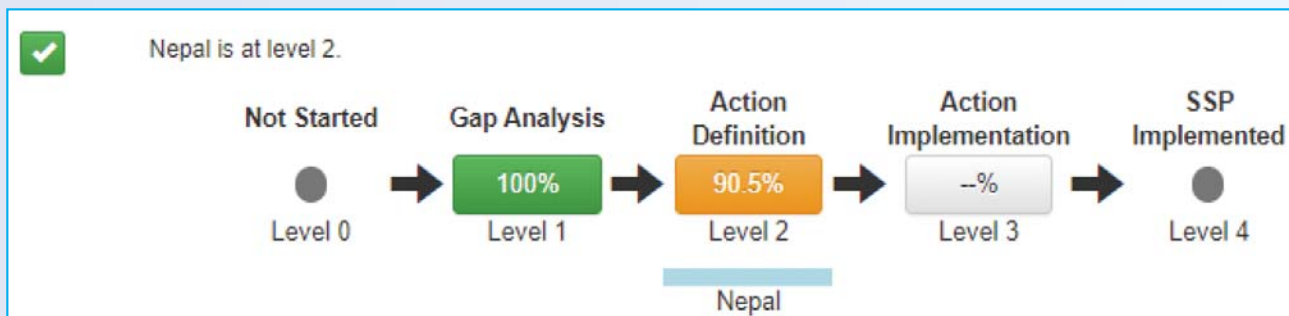
SSP Foundation by Subject Area

The sub-set of PQs has been grouped by 17 subjects as shown below. The grouping is based on Annex 19, second edition and Safety Management Manual, fourth edition.



SSP Implementation in Nepal

Nepal has almost completed Level 2 of SSP implementation satisfying the target of State agreed with ICAO.



Definitions:

Level 0: States not having started a GAP analysis

Level 1: States having started a GAP analysis

Level 2: States having reviewed all the GAP analysis questions

Level 3: States having defined an action plan for all non -implemented questions

Level 4: States having closed all actions and fully implemented their SSPs

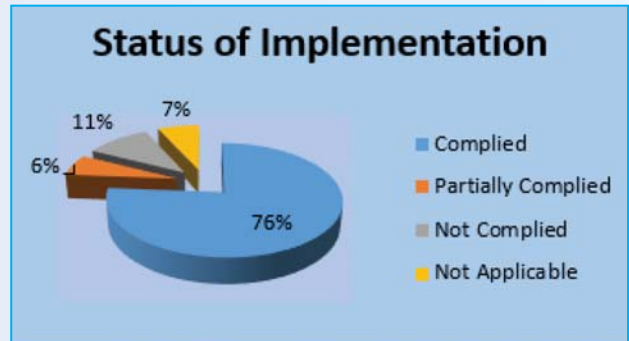


Nepal Aviation Safety Plan (NASP), 2018-2022 developed in congruence with the Global Aviation Safety Plan (GASP), Doc.10004. NASP (2018-2022) has identified six areas of operational safety risk, viz. Controlled Flight into Terrain (CFIT), Loss of Control in Flight (LOC-I), Mid Air Collision (MAC), Runway Incursion (RI), Runway Excursion (RE) and Wild life Strike (WS).

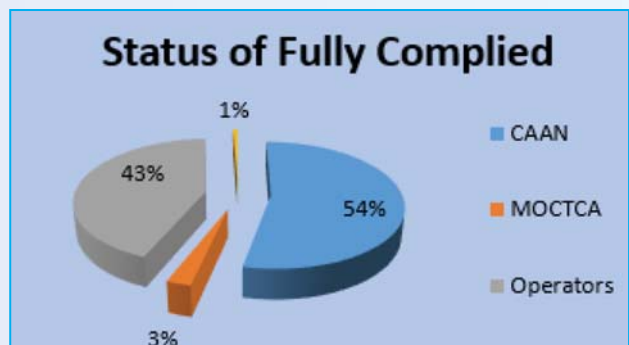


Status of Implementation of Accident Investigation Recommendations in Nepal (2010 to 2019)

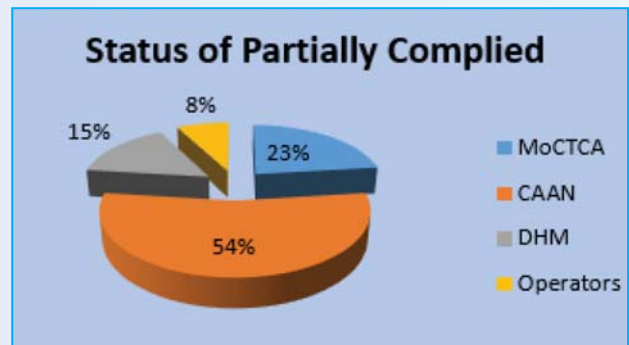
Total Recommendations:	206
Complied:	157
Partially complied:	13
Not Complied:	22
Not Applicable* :	14



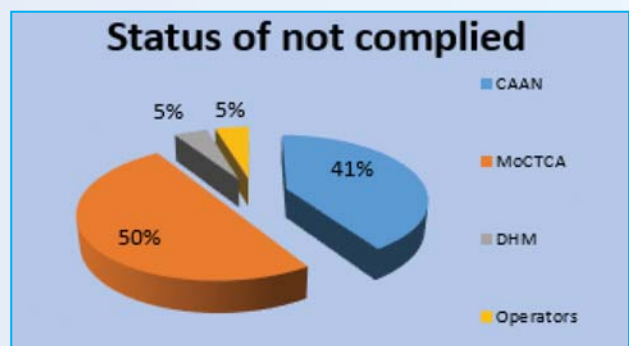
Total Complied:	157
CAAN:	84
MoCTCA:	4
Operator:	68
Nepal Oil Corporation:	1



Partial Complied:	13
MoCTCA:	3
CAAN:	7
DHM	2
Operator:	1



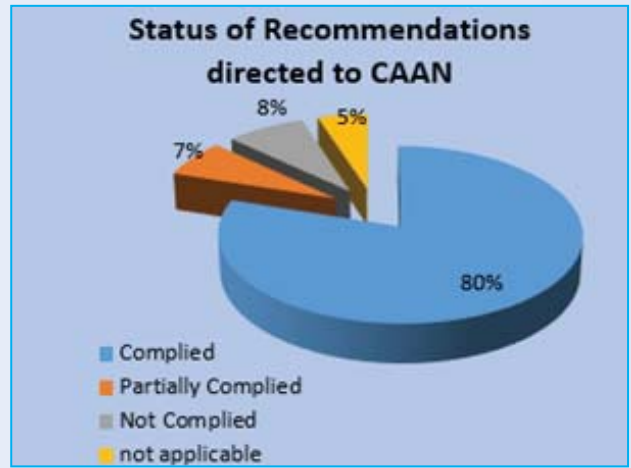
Not Complied:	22
CAAN:	9
MoCTCA:	11
DHM	1
Operator:	1



* not Applicable Recommendations have not been counted for any entity

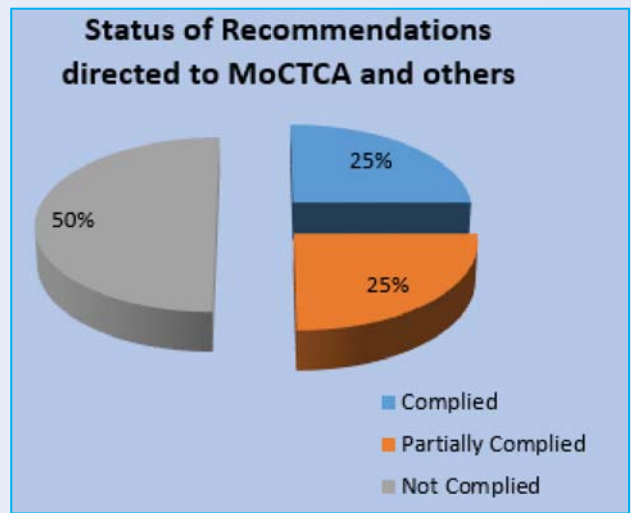
Recommendations directed to CAAN

Total Recommendations:	105
Complied:	84
Partially complied:	7
Not complied:	9
Not Applicable:	5



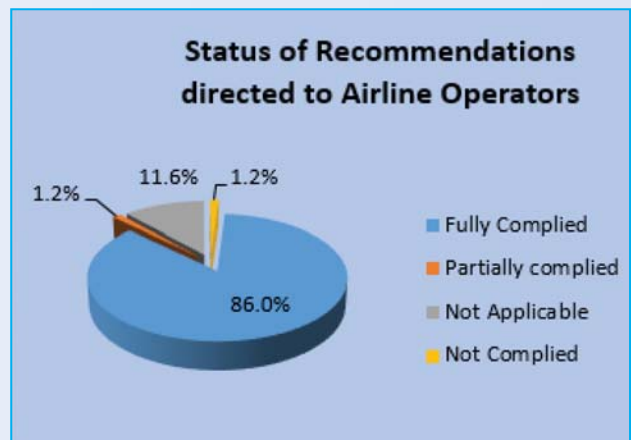
Recommendations directed to MoCTCA, DHM and NOC

Total Recommendations:	20
Complied:	5
Partially complied:	5
Not complied:	10



Recommendations directed to Airline Operators

Total Recommendations:	79
Complied:	68
Partially complied:	1
Not complied:	1
Not Applicable:	9



Nepal Aviation Safety Plan (NASP), 2018 to 2022

Goal 1

- Achieve a continuous reduction of operational safety risks

Goal 2

- Strengthen safety oversight capabilities of Nepal

Goal 3

- Implement the State Safety Programme (SSP)

Goal 4

- Increase collaboration at the regional level

Goal 5

- Expand the use of industry programmes

Goal 6

- Ensure the appropriate infrastructure is available to support safe operations



NASP Goals and Targets

Goal 1 **Target 1.1:** to maintain a decreasing trend of the national accident rate.

Goal 3 **Target 3.1:** Nepal to implement the foundation of its SSP by 2022.

Target 3.2: Nepal to attain L3 SSP implementation (defined actions implemented) by 2022.

Target 3.3: Nepal to implement an effective SSP (Level 4), as appropriate to the aviation system complexity by 2025.

Goal 5 **Target 5.1:** All service providers in Nepal to use globally harmonized SPIs as part of their safety management system (SMS) by 2020.

Target 5.2: Encourage to increase the number of service providers participating in the corresponding ICAO-recognized industry assessment programmes (ie IOSA accreditation).

Goal 6 **Target 6.1:** Nepal to implement air navigation and airport core infrastructure by 2022.

Target 6.2: Nepal to achieve at least 75% EI in AGA of USOAP CMA by 2022.

Target 6.3: Nepal to achieve at least 75% EI in AIG of USOAP CMA by 2022.

Target 6.4: Nepal to certify all aerodromes that are used for international operations by 2022.

Target 6.5: Nepal to establish an independent accident and incident investigation authority (AIIA) as required by Annex 13, as well as related investigation system and procedures by 2022.

Goal 2 **Target 2.1:** to improve score for the EI of CEs of the Nepal's safety oversight system with focus on priority PQs as follows:

By 2022- 75%

By 2026- 85%

By 2030- 95%

Target 2.2: to reach a positive safety oversight margin in all categories by 2022.

Goal 4 **Target 4.1:** Nepal to use a regional safety oversight mechanism, another State or other safety oversight organization's ICAO recognized functions in seeking assistance to strengthen their safety oversight capabilities by 2020.

Target 4.2: Nepal to contribute information on safety risks, including SSP Safety Performance Indicators (SPIs), to Asia Pacific aviation safety group (AP- RASG) by 2022.

Target 4.3: Nepal to actively lead RASGs' safety risk management activities with effective safety oversight capabilities and an effective SSP by 2022.

Target 4.4: Nepal to actively participate in the regional mechanism for data collection, analysis and sharing by 2020.

Target 4.5: Encourage to participate in flight data sharing initiatives by Nepal air operators, with aircraft of mass 27,000kg or above.

NASP SEIs Implementation Status

ANS Safety Standards Department (ANSSSD)

1. Promote the improvement of ATC systems, procedures and tools to enhance conflict management- With the installations of EMSSR system, task completed
2. Ensure that the ATC system is properly equipped of and is in effective implementation of STCA by 2022- With the installations of EMSSR system, task completed
3. Develop policy, procedures and trainings that support situational awareness for controllers, pilots, airside-vehicle drivers and other airport users by 2020- MATS Nepal Chapter 13, Training and Rating Program, 13.6, Emergency Training, 13.7 Refresher Training,
4. Ensure that procedures for the systematic reduction of the rate of unstabilized approaches to runways are developed and implemented by 2022- RNP AR APCH at TIA, New RNP AR APCH for RWY 20 and RWY 02 for TIA in Approval phase and all the latest PBN procedures implemented in airports namely Dhangadhi, Chandragadhi, Janakpur as well as the PBN procedure in Rajbiraj airport in approval phase are based in Continuous Descent Final Approach Techniques (CDFA)
5. Promote collecting, reporting, recording and analysis of data on Wildlife strikes and observed wildlife and formulate the strategies for Wildlife strike management- already implemented.
6. Besides above initiatives, the ANSSSD has taken following initiatives for the enhancement of overall safety of ATS operation:
 - a. Circular issued to ATS provider giving basic recommendations for the development of SOP to address the impact of COVID-19 pandemic
 - b. Monsoon Circular issued to ATS provider
 - c. Safety circular issued to ATS provider giving basic recommendations for the preparation to resume normal ATS operation in new normal situation.

Aerodrome Safety Standards Department (ASSD)

1. Aerodrome Certification: Currently one international airport (TIA) and two regional hub airports (Birtatnagar and Nepalgunj) have been granted aerodrome certification. Gautam Buddha airport is in preliminary phase of preparing aerodrome manual and other documents required for applying for aerodrome certification.
2. Reporting of runway surface condition: All the certified aerodrome operators are notified for making necessary preparations to meet the applicability date of November 2021 (amended) for using ICAO global reporting format for assessing and reporting runway surface condition (GRF). Also some aerodrome inspectors and officials have received online training regarding the ICAO global reporting format.
3. RESA: Runway extension work at 02 RWY end of TIA is in final phase of construction, which after completion will provide RESA at both runway ends.
4. Wildlife Strike: With the replacement of existing ICAO bird strike information system with new European Coordination Center for Accident and Incident Reporting system (ECCAIRS), all the certified aerodrome operators have been notified for reporting bird strike/wildlife strike using ECCAIRS format.
5. New bird scarring devices have been installed at TIA as means for distracting birds.

6. Management of Bird Activities

At each certified airport, bird control coordination and implementation unit chaired by GM/ Director of the airports has been formed. The major function of such unit includes collecting data on bird activities in vicinity of airports and managing bird hazard by finding out appropriate solution.

Flight Safety Standards Department (FSSD)

1. Advisory Circular on Monsoon issued to all air operators.
2. Flight Safety Circular on Guidance for operators on training programme on the use of GPWS issued.
3. Flight Safety Circular on Guidance for operators to ensure effectiveness of GPWS equipment issued.
4. Flight Safety Circular on CRM Training Programme issued.
5. Flight Safety Circular on CFIT and ALAR training issued.
6. Flight Safety Circular on Mode Awareness and Energy State Management Aspects of issued. Flight Deck Automation issued.
7. Flight Safety Circular on Instrument Approach Procedure using CDFA Technique issued.
8. Flight Safety Circular on Establishment of FDAP issued.
9. Flight Safety Circular on FSDS issued.
10. Flight Safety Circular on Air Operators' SOP for Flight Deck Crewmembers SEI- issued. LOC-I- CFIT issued.
11. Flight Safety Circular on Runway Safety Maturity issued.
12. Flight Safety Circular on Runway Incursion prevention and pilot training issued.
13. Flight Safety Circular on Flight crew proficiency issued.



Following safety activities were conducted by CAA Nepal and other aviation stakeholders from January 2019 to June 2020.

1. Workshop on GNSS based separation awareness at Dhangadhi Airport (January 2019) conducted by CAAN.
2. Workshop on AIS awareness and PBN/GNSS based separation at Nepalganj airport (January 2019) conducted by CAAN..
3. ANS safety Oversight awareness programme at Surkhet Airport (March 2019) conducted by CAAN.
4. ANS Licensing /Rating and SAR awareness programme at TIACAO (March 2019) conducted by CAAN.
5. ANS regulatory and ATC licensing/rating awareness programme at Pokhara Airport in June 2019 by CAAN.
6. Flight Operation Officer (Dispatcher)- FOO Safety Awareness Program (8-9 July 2019) conducted by CAAN and COSCAP-SA.
7. Interaction on Monsoon Operation Safety (14 July 2019) organized by CAAN.
8. Initial FOI (With OJT) Course (16 Jul-02 Aug 2019) conducted by CAAN and COSCAP-SA.
9. Training and Standardization Course, (5-9 Aug 2019) conducted by CAAN and COSCAP-SA.
10. Root Cause Analysis (25 to 27 September 2019) organized by CAAN and AOAN.
11. ANS licensing awareness and PBN application training at Dhangadhi Airport (October 2019) conducted by CAAN.
12. Aviation Auditor Training (2 to 6 December 2019) organized by CAAN and AOAN.
13. Aircraft Maintenance Reliability Training (16 to 20 December 2019) organized by CAAN and AOAN.
14. Safety Management System (23 December 2019) organized by AOAN
15. Introductory Training on Helicopter Weight and Balance (24 December 2019) organized by AOAN.
16. Workshop on ANS regulatory framework and SAR awareness programme at Biratnagar Airport (December 2019) conducted by CAAN.
17. Introductory Training on Helicopter Weight and Balance (21 January 2020) organized by AOAN
18. Workshop on Safety Risk Management in Flight Procedure Design Implementation (20 January 2020) organized by CAAN.
19. Safety Management System (19-22 January 2020) organized by AOAN
20. Instructor Standardization Ground Training (16 January 2020) organized by CAAN and Airbus Helicopter.
21. Aviation medicine refresher course (22 January 2020) organized by CAAN.
22. Seminar on 'QMS in AIS' and 'PELR for ATSEP and CNS Operation Practices' (14 February 2020) organized by CAAN.
23. ATO workshop (18-20 February 2020), organized by CAAN and DGAC France.

24. MEL workshop (5-6 March 2020) organized by CAAN and DGAC France.
25. Flight Assessment of Instructor Pilot- Helicopter (18-24 January 2020), organized by CAAN and Airbus Helicopter.
26. Training On Understanding Safety Culture For Accountable Manager (20 January 2020), organized by CAAN and Airbus Helicopter.
27. Training On Understanding Safety Culture For Accountable Manager (20 January 2020), organized by CAAN and Airbus Helicopter.
28. Training On Understanding Safety Culture For Pilots/ AME” (Part-I) (21 January 2020), organized by CAAN and Airbus Helicopter.
29. Safety Concern Workshop (22-24 January 2020) organized by CAAN and DGAC France.
30. Training on Understanding Safety Culture For Pilots/ AME” (Part-II) (30 January 2020), organized by CAAN and Airbus Helicopter.
31. Workshop on SMS for executives (24 February 2020) organized by CAAN and COSCAP-SA.
32. Workshop on Defining SPIs and SPTs (25 to 27 February 2020) organized by CAAN and COSCAP-SA.
33. Webinar on ATFM Workshop (May 2020) conducted by CAAN.
34. Webinar on SMS awareness Programme (19 June 2020) organized by CAAN.
39. Crisis Management Preparedness Seminar organized by CAAN.
40. Webinar on EDTO and EFB (July 2020) conducted by CAAN and COSCAP-SA.
41. NGAP programmes in different educational institutions conducted by CAAN.



Appendix-1

Record of Multi-engine Aeroplane Accident in Nepal

S.N.	Date	Registration	Type of A/C	Operator/ Owner	Operation	Place	Fatality	Survival
1	5 Nov 1960	9N-AAD	DC-3	Nepal Airlines	Scheduled	Bhairahwa	4	None
2	1 Aug 1962	9N-AAH	DC-3	Nepal Airlines	Scheduled	TulachanDhuri	10	None
3	12 July 1969	9N-AAO	DV-3	Nepal Airlines	Scheduled	Near Heatauda	35	None
4	25 Jan 1970	9N-AAR	F-27	Nepal Airlines	Scheduled	New Delhi	1	22
5	15 Oct 1973	9N-ABG	DHC-6/300	Nepal Airlines	Scheduled	Lukla	None	6
6	22 Dec 1984	9N-ABH	DHC-6	Nepal Airlines	Scheduled	Cheklatidanda	15	8
7	02 May 1986	9N-ABI	DHC-6	Nepal Airlines	Scheduled	Sanfegagarirport	None	
8	19 Aug 1987	9N-ABB	DHC-6	Nepal Airlines	Scheduled	Dolpa	None	
9	9 Jun 1991	9N-ABA	DHC-6	Nepal Airlines	Scheduled	Lukla	None	
10	28 Jun 1991	9N-ABS	DHC-6	ATSC,DCA	Charter	Simikot	None	
11	26 Sep 1992	9N-ACI	Y-12	NepalAirways	Scheduled	Lukla	None	
12	08 Nov 1993	9N-ACS	Y-12 II	NepalAirways	Scheduled	Jomsom	None	
13	31 Jul 1993	9N-ACL	DO-228	Everest Air	Scheduled	Solighopte	18	None
14	14 Jan 1995	9N-ABI	DHC-6	Nepal Airlines	Scheduled	Kathmandu Airport	2	23
15	15 Jul 1995	9N-ADB	Y-12	NepalAirways	Scheduled	Bharatpur	None	
16	25 Apr 1996	9N-ABR	HS-748	Nepal Airlines	Scheduled	Meghauri	None	
17	28 Jul 1996	9N-ACC	DHC-6/300	ATSC,DCA	Charter	Simikot	None	
18	23 Dec 1996	9N-ACF	Y-12	NepalAirways	Scheduled	Dolpa	None	
19	21 Aug 1998	9N-ACC	DHC-6	Sangrila Air	Scheduled	ChuchcheKhark, Myagdi	18	None
20	05 Sept	9N-AEG	HS-748	Necon Air	Scheduled	Thankot,Kathmandu	15	
19	1999	9N-AEG	HS-748	Necon Air	Scheduled	Thankot,Kathmandu	15	
21	25 Dec 1999	9N-AFL	DHC-6	SkylineAirways	Scheduled	Burjo Lake, Makwanpur	10	
22	26 Feb 2000	9N-ABO	DHC-6	Nepal Airlines	Scheduled	Bajhang	1	
23	27 Jul 2000	9N-ABP	DHC-6	Nepal Airlines	Scheduled	Jogbuda,Dadeldhura	25	None
24	03 Nov 2000	9N-ACV	DO-228	GorkhaAirlines	Scheduled	Lukla	None	
25	19 Nov 2000	9N-AFS	DO-228	Cosmic Air	Scheduled	Tumlingtar	None	
26	05 Apr 2001	9N-AEV	DHC-6/300	YetiAirlines	Scheduled	Tumlingtar	None	3
27	17 Jul 2002	9N-AGF	DHC-6/300	SkylineAirlines	Scheduled	GadgadeDanda,Surkhet	4	None
28	22 Aug 2002	9N-AFR	DHC-6/300	Shangrila Air	Scheduled	Pokhara	18	None
29	21Apr2004	9N-AEK	B1900D	BuddhaAir	Scheduled	TIAAirport	1	None
30	25May2004	9N-AFD	DHC-6/300	YetiAirlines	Scheduled	Lamjura,Solukhumbu	3	None
31	30June 2005	9N-AEO	DO-228	GorkhaAirlines	Scheduled	Lukla Airport	None	12

32	12 June 2006	9N-AEQ	DHC-6/310	Yeti Airlines	Scheduled	Jumla Airport	9	None
33	03 July 2006	9N-AFE	DHC-6/310	Yeti Airlines	Scheduled	Bajura Airport	None	3
34	08 Oct 2008	9N-AFE	DHC-6/300	Yeti Airlines	Scheduled	Lukla Airport	18	1
35	24 Aug 2010	9N-AHE	DO-228	Agni Air	Scheduled	Sikharpur, Makawanpur	14	None
36	15 Dec 2010	9N-AFX	DHC-6/300	Tara Air	Scheduled	Okhaldhunga,	22	None
37	25 Sept 2011	9N-AEK	Beech 1900D	Buddha Air	Scheduled	Kotdanda, Lalitapur	19	None
38	14 May 2012	9N-AIG	DO-228	Agni Air	Scheduled	Jomsom Airport	15	6
39	21 Sept 2012	9N-ABQ	Do-228	Tara Air	Scheduled	Dolpa	None	7
40	28/Sept 2012	9N-AHA	DO-228	Sita Air	Scheduled	Manohara, Bhaktapur	19	None
41	16 May 2013	9N-ABO	DHC-6/300	Nepal Airlines	Scheduled	Jomsom Airport	None	22
42	01 June 2013	9N-AHB	DO-228	Sita Air	Scheduled	Simikot Airport	None	7
43	16 Feb 2014	9N-ABB	DHC-6/300	Nepal Airlines	Scheduled	Masinelek, Arghakhanchi	18	None
44	24 Feb 2016	9N-AHH	DHC-6/400	Tara Air	Scheduled	Dana, Myagdi	23	None
45	24 Sept 2016	9N-AIB	J41	Yeti Airlines	Scheduled	Bhairahawa	None	32
46	27 May 2017	9N-AKY	Let 410	Summit Air	Cargo	Lukla Airport	2	1
47	28 Nov 2017	9N-ABM	DHC-6/300	Tara Air	Scheduled	Simikot	None	16
48	9 June 2018	9N-AEV	DHC-6/300	Tara Air	Scheduled	Jumla	None	21
49	1 Sept. 2018	9N-AHW	JS41	Yeti Airlines	Scheduled	TI Airport	None	21
50	14 April 2019	9N-AMH	LET 410	Summit Air	Scheduled	Lukla Airport	1 + 2	2



Appendix-2

Record of Single Engine Aeroplane Accidents in Nepal

S.N.	Date	Registration	Type of A/C	Operator/Owner	operation	Place	Fatality	Survival
1	31 Mar 1975	9N-AAZ	PC-6	Nepal Airlines	Charter	Bouddha, Kathmandu	5	None
2	30 Oct 1981	9N-ABJ	PC-6	Nepal Airlines	Charter	Biratnagar	10	None
3	20 Nov 1998	9N-ABK	PC-6/B2-H4	Nepal Airlines	Charter	Phakding	1	None
4	17 Jan 1999	9N-ADA	Cessna-208	Necon Air	Charter	Jumla	5	7
5	21 Nov 2011	9N-AJM	Cessna-208	Makalu Air	Cargo	Talcha Airport	None	None
6	26 Feb 2016	9N-AJB	PAC750XL	Air Kashthamandap	Charter	Chilkhaya Kalikot	2	9
7	08 Apr 2016	9N-AKC	Cessna-208	Makalu Air	Cargo	Near Simikot	None	2
8	16 May 2018	9N-AJU	Cessna-208	Makalu Air	Cargo	Simikot Pass	2	None



Appendix-3

Record of Helicopter Accidents in Nepal

S.N.	Date	Registration	Type	Operator/Owner	Place	Fatality	Survival
1	27 Dec 1979	9N-RAE	Allutte-III	VVIP	Langtang	6	None
2	27 Apr 1993	9N-ACK	Bell-206	Himalayan Helicopter	Langtang	None	
3	24 Jan 1996	9N-ADM	MI-17	Nepal Airways	Sotang	None	3
4	30 Sep 1997	9N-AEC	AS-350	Karnali Air	ThuptenCholing	1	4
5	13 Dec 1997	9N-ADT	MI-17	GorkhaAirlines	Kalikot	None	
6	04 Jan 1998	9N-RAL	Bell-206	VVIPFlight	Dipayal		
7	24 Oct 1998	9N-ACY	AS-350B	Asian Airlines	MulKhark	3	None
8	30 Apr 1999	9N-AEJ	AS-350BA	Karnali Air	Lisunkhu, Sindhupalchowk	None	
9	31 May 1999	9N-ADI	AS-350B2	ManakamanaAirways	Ramechhap	None	
10	11 Sep 2001	9N-ADK	MI-17	Air Ananya	Mimi	None	5
11	12 Nov 2001	9N-AFP	AS-350B	Fishtail Air	Rara Lake, Mugu	4	2
12	12 May 2002	9N-AGE	AS 350B2	Karnali Air	Makalu Base Camp	None	1
13	30 Sep 2002	9N-ACU	MI-17	Asian Airlines	Sholumkhumbu*	11	None
14	(MI8-MTV)	Asian Airlines	Sholumkhumbu*	11	None	2	6
15	28 may 2003	9N-ADP	MI-17 IV	Simrik Air	Everest Base Camp	2	6
16	04 Jan 2005	9N-AGG	AS-350BA	Air Dynasty Heli Service	Thhose VDC, Ramechhap	3	None
17	02 Jun 2005	9N-ADN	MI-17	Shree Airlines	Everest Base Camp.	None	7
18	07 May 2006	9N-ADT	MI-17 MTV1	HeliHansa Services	Dhawalagiri BaseCamp	None	7
19	08 Aug 2006	9N-AGS	MI-17	Karnali Air	TI Airport, KTM	None	5
20	03 Sep 2006	9N-ACR	AS-350BA	Air Dynasty Heli Service	Dhawalagiri Base Camp	None	1
21	23 Sep 2006	9N-AHJ	MI-17	Shree Airlines	Ghunsa, Taplejung	24	None
22	23 Nov 2006	9N-ADO	MI-17	Simrik Air	Raralihi, Jumla	None	4
23	29 Jun 2008	9N-AIA	AS-350	Fishtail Air	Annapurna Base Camp	None	4
24	07 Nov 2010	9N-AIX	AS 350B3	Fishtail Air	Amadablam Mountain	2	None
25	29 Nov 2011	9N-AIK	AS 350B	Fishtail Air	Solukhumbu	None	2
26	19 Jun 2013	I-VIEW	AS 350B3	Fishtail Air	Simikot, Muchu	1	5
27	03 Aug 2014	9N-AJI	AS 350B3	Fishtail Air	Sindhupalchok	1	None
28	02 Jun 2015	9N-AJP	AS 350B3	Mountain Helicopter	Yamuna Danda, Sindhupalchok	4	None
29	22 Jun 2015	9N-AKF	AS 350B3e	Simrik Air	Samdo, Gorkha	None	5
30	17 Mar 2016	9N-AJI	AS 350B3	Fishtail Air	Langtang	None	1
31	08 Aug 2016	9N-AKA	AS 350B3	Fishtail Air	Betani, Nuwakot	7	None
32	30 June 2018	9N-ALR	AS 350B2	Simrik Air	Grandy Roof-top Helipad	None	1
33	14 Aug. 2018	9N-AHV	AS350 B	Manang Air	Hilsa, Humla	1	6
34	8 Sept. 2018	9N-ALS	AS350 B3	Altitude Air	Dhading	6	1
35	27 Feb. 2019	9N-AMI	AS350 B3 E	Air Dynasty	Pathivara, Taplejung	7	None
36	14 April 2019	9N-ALC	AS350	Manang Air	Lukla Airport	None	1

Appendix-4

Record of foreign - registered aircraft accidents in Nepal

S.N.	Date	Registration	Type	Operation	Operator/Owner	Place of accident	Fatality	Survival
1	30 Aug 1955	VT-AZX	DC-3	Scheduled	Kalinga Air	Simara	2	1
2	15 May 1956	VT-DBA	DC-3	Scheduled	Indianairlines	Kathmandu	14	19
3	24 Mar 1958	VT-CYN	DC-3	Scheduled	IndianAirlines	Patnebhajyang	20	None
4	10 May 1972	HS-TGU	DC-8-33	Scheduled	ThaiAirways International	TIA	0 + 1	110
5	31 Jul 1992	HS-TID	A 310	Scheduled	ThaiAirways	Gyangphedi	113	None
6	28 Sep 1992	AP-BCP	A 310	Scheduled	Pakistan International Airlines	Bhattedanda	167	None
7	07Jul1999	VT-LCI	B727 (200)	Cargo	Lufthansa	Bhasmasur Hill, Kathmandu	5	None
8	4 Mar 2015	TC-JOC	A330-300	Scheduled	TurkishAirlines	TIA	None	235
9	12 Mar 2018	S2 - AGU	DHC 8 D	Scheduled	US Bangla	TIA	51	20

Appendix-5

Record of recreational aircraft (Ultralight) accidents in Nepal

S.No.	Date	Registration	Type	Operation	Airline	Place of accident	Fatality	Survival
1	03 Oct 2013	9N-AJY	A-22L2	Sports	Avia Club	Santi Stupa, Pokhara	2	None
2	10 Aug 2015	9N-ALI	Aeros 2	Sports	Pokhara Ultralight	Machhapuchhre VDC, Kaski	2	None
3	23 Nov 2016	9N-ALL	Ultralight	Sports	Aviaclub	Pokhara	1	1





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