AVIATION SAFETY BULLETIN

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An official publication of the Civil Aviation Authority of Fiji

SOARING HIGH TOGETHER

'Promoting Effective Aviation Safety and Security in Fiji and the Region.'

THE EVOLUTION OF AVIATION SAFETY
A GLOBAL JOURNEY

IMPORTANCE OF TOOL CONTROL FOR SAFETY

NAVIGATING THE CHALLENGES & LIMITATIONS OF GRASS RUNWAYS IN FIJI'S AVIATION LANDSCAPE

LASER INCIDENTS ON THE RISE

Cover Pic: Designed by Editor

In this issue...

MESSAGE FROM THE DESK OF CHIEF EXECUTIVE	3
SAFETY IN AIS/AIM A FUNCTION OF DATA QUALITY	4-5
THE EVOLUTION OF AVIATION SAFETY A GLOBAL JOURNEY	6-7
SOARING HIGH TOGETHER INSPIRING INCLUSION IN AVIATION SAFETY & SECURITY	8-9
IMPORTANCE OF TOOL CONTROL FOR SAFETY	10-11
NAVIGATING THE CHALLENGES & LIMITATIONS OF GRASS RUNWAYS IN FIJI'S AVIATION LANDSCAPE	12-13,15
FUNCTIONS OF PERSONNEL LICENSING	14-15
SPACE WEATHER	16-17
CABIN SAFETY FOR PASSENGERS	18
CAAF APPOINTS EXECUTIVE MANAGER GROUND SAFETY	19
LASER POINTING INCIDENTS ON THE RISE	20-21
AVIATION MEDICINE: FATTY LIVER DISEASE	22-23

AVIATION SAFETY BULLETIN

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Message from the desk of
Chief Executive

Bula Vinaka and welcome to the first quarter edition of the CAAF Aviation Safety Bulletin.

As we embark on a new year, maintaining the highest standards of aviation safety and security remains our unwavering commitment. This edition delves into a diverse range of topics, each critical to fostering a safe, secure and robust aviation environment in Fiji.

We begin with the fundamental role of accurate data in Aeronautical Information Services (AIS) through Aeronautical Information Management. This data ensures pilots navigate safely through Fijian airspace and thus the integrity of this data is vital. We then explore the inspiring evolution of aviation safety on a global scale, highlighting the continuous advancements that keep us soaring higher.

In celebration of International Women's Day, we explore the importance of fostering inclusivity within the aviation sector, encouraging all to soar high together. Fiji's women trailblazers paved the way - we salute you! This is a great message highlighting the importance of inclusivity in aviation and honoring the Fijian women who have made a difference.

Tool control emerges as a crucial element in safeguarding operations, followed by a dedicated focus on navigating the unique challenges and limitations of Fiji's grass runways. Understanding these factors remains paramount for all stakeholders.

This quarter's bulletin also sheds light on the functions of CAAF personnel licensing, ensuring qualified individuals contribute to a safe and efficient aviation industry.

Intrigued by the vastness of space? We delve into the potential impact of space weather on aviation operations. Additionally, we prioritize passenger safety with an informative piece on cabin safety procedures.

We are thrilled to announce the appointment of Ms. Alisi Namoro as CAAF's new Executive Manager Ground Safety (EMGS). The appointment of Ms. Namoro as EMGS underscores CAAF's unwavering commitment to prioritising safety in Fijian aviation.

As a growing concern, the rise of laser pointer incidents targeting aircraft is addressed, highlighting the potential dangers of such irresponsible behavior.

Finally, our aviation medicine segment tackles the issue of fatty liver disease, raising awareness and encouraging preventative measures.

We trust this edition provides valuable insights and reinforces the collaborative effort required to ensure a safe, secure and thriving aviation industry in Fiji.

Please take the time to read through these informative articles, and remember, safety is a shared responsibility.

We fly together, we land together■

Ms Theresa O'Boyle-Levestam
Chief Executive

Safety In AIS/AIM

A Function of Data Quality

THE IMPORTANCE OF AIM - through safety promotion

To prevent accidents and incidents, closer collaboration between Aeronautical Information Service (AIS) and Data Originators is essential. This collaboration should focus on investigating incidents/accidents where aeronautical data and/or products (AIP, charts, NOTAMs, etc.) were identified as contributing factors. By working together, AIS and Data Originators can identify areas for improvement and implement effective solutions. Formal data and information verification and validation processes are crucial to mitigating these risks.

1. Turkish Airlines Airbus A330-300—333 crash after approaching at higher rate of descent at Kathmandu Nepal, 2015

WGS-84 Calculator showing calculated co-ordinates

AIM Related Findings and Recommendations

- Effective coordination between AIS and data originators: There must be a well-established and efficient communication channel between Aeronautical Information Services (AIS) and the organizations that provide them with aeronautical data (aerodrome data originators). This ensures timely exchange of information and minimizes errors.
- Data accuracy and integrity: The raw data provided by aerodrome data originators needs to meet the accuracy and integrity requirements outlined in ICAO Annex 15 and the Aeronautical Information Service Manual. This ensures the safety of flight operations.
- Planning before dissemination: Before releasing any aeronautical information through AIS, there should be a clear understanding of its importance and any potential impact it might have. Careful planning for any required actions is crucial.
- AIRAC update cycle: When canceling an Aeronautical Information Publication (AIP) supplement, both data originators and AIS should be aware of the Aeronautical Information Regulation and Control (AIRAC) update cycle. This ensures a smooth transition and minimizes disruption to flight operations.

Aircraft Final position in the Grass area between taxiway C and D

Initial touchdown points of left and Nose landing Gears

2. Comair Bombardier CRJ-100ER CL60 crash after attempting to take off from wrong runway, Lexington KY USA, 2006

AIM Related Findings and Recommendation

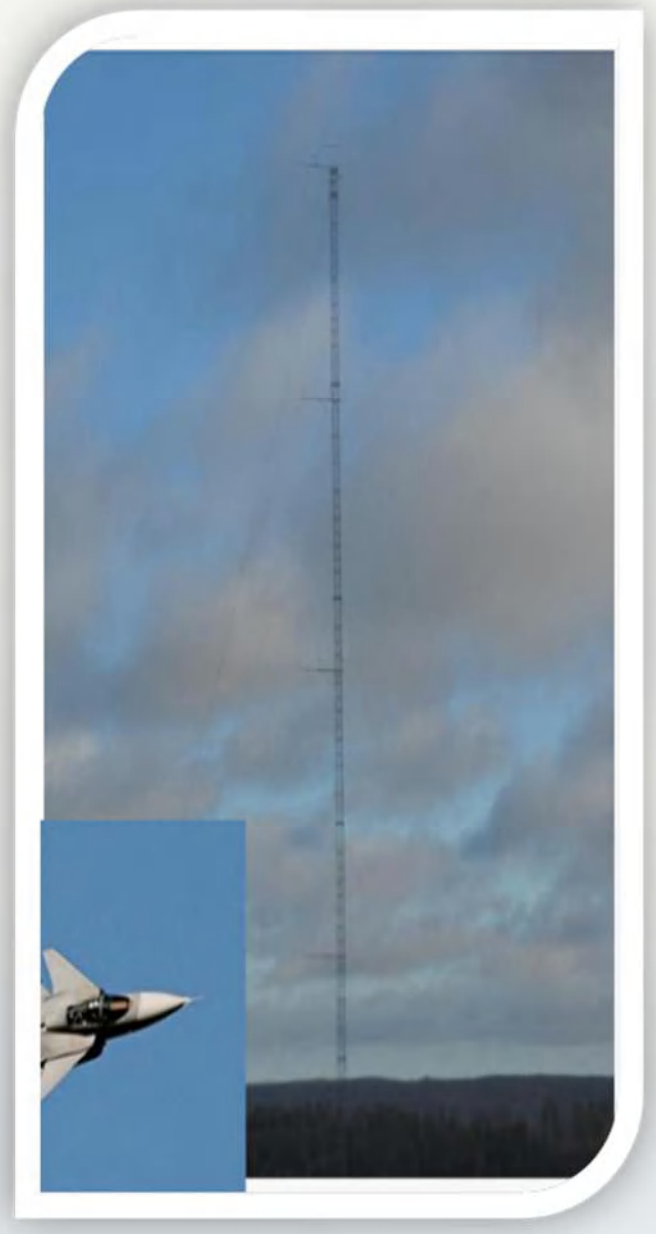
- Due to ongoing construction, the airport chart provided to the flight crew contained inaccurate taxiway identifiers. Additionally, a Notice to Airmen (NOTAM) regarding the closure of a taxiway was not included in either the ATIS broadcast or the flight release paperwork.

3. SAS Boeing MD87 collided at high speed with Cessna Citation C525 Jet, Milan Linate, 2001

AIM Related Findings and Recommendation

Markings that existed on TWY were not duly reported on AIP. Consequently, this was not reflected in Jeppesen and SAS Flight Support documentation.

White flashing lights, positioned at TWY intersection with RWY described on AIP official charts had been deactivated and substituted by unidirectional alternate green/yellow lead lights to guide exit from RWY and entrance to TWY. Official documentation showed none of these changes.



Safety Recommendations

For safe operation, all essential information, including the status of airport visual aids and published taxi procedures for domestic airports, must be current and readily available in the Aeronautical Information Publication (AIP).

.

4. Military aircraft passed mast at very close range when flying low (30 meters). The lateral clearance was assessed to be approximately 10–20 meters. The mast was not recorded in the chart documentation used.

AIM Related Findings and Recommendation

- There is a need to clarify the responsibility for obstacle database and responsibility of Aeronautical Information Services and ensure that measures are taken as soon as possible with the purpose od ensuring that both existing and future information on obstacles for the needs of civil aviation fulfil the quality requirements.

- Take measures as soon as possible in order to address aviation safety with regards to the existing quality of obstacle data and the marking out of obstacles

- CAA to use its authority to issue regulations for reporting obstacles and to take measures to ensure that the information on all new obstacles fulfills the quality requirements imposed■

Source: Eurocontrol

The Evolution of Aviation Safety: A Global Journey

Image: Lacie Slezak | Unsplash

Since the dawn of commercial aviation, the pursuit of safety has been at the forefront of the industry's priorities. From the pioneering flights of the Wright brothers to the modern jet age, the history of aviation safety is a testament to the resilience, innovation, and collaboration of a global community dedicated to ensuring the safety of passengers and crew.

Early Days:

The birth of commercial aviation in the early 20th century was marked by a series of daring feats and tragic accidents. As aviation technology advanced, so too did the need for safety standards and regulations. In the aftermath of high-profile disasters, such as the Hindenburg disaster in 1937, governments and industry stakeholders began to recognise the urgent need for comprehensive safety measures.

Formation of Standards:

The post-World War II era saw the establishment of international aviation organisations, such as the International Civil Aviation Organization (ICAO), tasked with developing global safety standards and regulations. These standards encompassed all aspects of aviation, from aircraft design and maintenance to air traffic control and pilot training.

Advancements and Challenges:

The advent of jet propulsion in the 1950s ushered in a new era of commercial aviation, bringing with it, unprecedented speed and efficiency. However, this rapid progress also presented new challenges for safety regulators. The increasing complexity of aircraft systems required a more rigorous approach to safety management, leading to the development of sophisticated safety protocols and technol-

Global Collaboration:

In an interconnected world, aviation safety transcends national borders. Recognising the need for a unified approach to safety, governments, airlines, manufacturers, and regulatory bodies have forged partnerships to share information, best practices, and resources. Through initiatives such as the Global Aviation Safety Plan (GASP), the global aviation community works together to identify and mitigate potential safety risks.

Technological Innovation:

The 21st century has witnessed remarkable advancements in aviation safety technology, from state-of-the-art aircraft systems to advanced safety management software. Automated flight control systems, enhanced weather forecasting capabilities, and real-time data monitoring have all contributed to making air travel safer than ever before.

The Human Factor:

While technological innovations play a crucial role in aviation safety, the human element remains equally important. Comprehensive training programs, robust safety culture initiatives, and effective communication protocols are essential components of a safe and reliable aviation system. By prioritising human factors in safety management, the industry ensures that pilots, maintenance personnel, and air traffic controllers are equipped to handle any situation with skill and confidence.

Looking Ahead:

As aviation continues to evolve, so too will the challenges and opportunities in ensuring safety. From the rise of unmanned aerial vehicles to the prospect of commercial space travel, the future of aviation safety will require adaptability, innovation, and collaboration on a global scale. By embracing these principles, the aviation community can build upon its rich history of safety and continue to inspire confidence in passengers around the world.

In conclusion, the history of aviation safety is a testament to the unwavering commitment of the global aviation community to prioritise safety above all else. Through decades of innovation, collaboration, and resilience, the industry has made remarkable strides in ensuring the safety of millions of passengers who take to the skies each day. As we look to the future, let us continue to uphold the highest standards of safety, guided by the principles of cooperation, diligence, and excellence■

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emailing to : *info@caaf.org.fj*

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www.caaf.org.fj

***OR* FRONT DESK, CAAF HQ.**

Soaring High Together

Inspiring Inclusion In Aviation Safety & Security

This International Women's Day (IWD), themed "Inspire Inclusion," the aviation industry joined the global chorus in celebrating the invaluable contributions of women in aviation safety and security.

What does it mean to be included? It a sense of belonging, where one's voice is heard and contribution is valued and where one feels empowered to fully participate.

"Diversity is being invited to the party, Inclusion is being asked to dance."

FO Vanika Itautoka (B737), Capt. Selai Saumi (A330), Capt. Seini Cornish (A330)

For over a century, women have defied stereotypes and soared through societal biases to make their mark on aviation. From pioneers like Amelia Earhart, the legendary long-distance flyer, to Selai Saumi and Seini Koroitamana, Fiji Airways' first female jet captains, Sereima Tuiketei, Fiji's first licensed Aeronautical Facility Technician, Kalusi Raloka, Fiji's first female Surveillance Air Traffic Controller, Elenoa Tudrau, Fiji's first HF Air to Ground Operator, and Maria Munivai, Fiji's first female Licensed Aircraft Maintenance Engineer, these women, alongside countless others; pilots, air traffic controllers, engineers, security experts, oversight inspectors and aerospace leaders, pave the way for a more inclusive future of aviation.

The theme to Inspire Inclusion resonates deeply within aviation. While strides have been made, the industry still grapples with gender disparity. In Fiji, women make up 34% of licensed air traffic controllers, 8.9% of commercial pilots, 8% of aeronautical facility technicians and 5% of licensed aircraft maintenance engineers. We must acknowledge this gap and recommit to fostering a more inclusive environment.

Women play a vital role in every aspect of aviation safety and security; their unique perspectives and experiences are essential for a comprehensive approach to safety and security.

When women feel included and valued, they are more likely to reach their full potential and contribute meaningfully to aviation safety and security landscape.

As we celebrate the achievements of women in aviation, we must also focus on creating a future where talent is valued regardless of gender. This means dismantling unconscious biases in hiring practices, promoting work-life balance initiatives that support women in their careers, and fostering a culture of respect and opportunity.

In modern aviation, women can be found working on everything from cutting-edge aircraft design to the development of advanced avionics systems. By fostering a culture of inclusion, we have not only empowered a diverse workforce but also created a more resilient, safe and secure environment for everyone.

Let us celebrate the remarkable women who have flown the path and inspire the next generation of aviators to reach for the skies. By working together to #InspireInclusion, we can ensure that the future of aviation is one where women soar alongside men, reaching new heights of innovation and achievement.

Everyone can be a catalyst for change and cultivate a culture of inclusion by being inclusive even in the smallest things. Creating an environment where everyone feels included, where everyone feels valued. Challenging ourselves in areas that matter.

We have, in past bulletins, highlighted CAAF's female pioneers. This bulletin spotlights Peniana Waqavanua, the organization's first woman to hold the position of Aviation Security and Facilitation Inspector.

Ms. Waqavanua joined CAAF in October 2016 embarking on a three-year training program. While gaining on-the-job experience, she concurrently completed a Diploma in Aviation Security Operations. In October 2019, she achieved a significant milestone, becoming the first female Aviation Security and Facilitation Inspector in Fiji.

This critical role ensures the safe, efficient, and secure flow of air travel. Ms. Waqavanua accomplishes this by conducting audits and inspections, focusing on the implementation and maintenance of key programs; the National Civil Aviation Security Programme, National Civil Aviation Quality Control Programme and the National Civil Aviation Security Training Programme. Her responsibilities extend to regulatory oversight, ensuring these programs are implemented and reviewed effectively. Furthermore, Ms. Waqavanua guarantees that all evaluations, audits, inspections, and other activities comply with Fijian regulations and International Civil Aviation Organization (ICAO) standards.

Through her dedication, Ms. Waqavanua significantly contributes to maintaining a safe and secure air transport system in Fiji, while also promoting a smooth travel experience for passengers. Adding to her impressive qualifications, Ms. Waqavanua holds a Bachelor of Laws Degree and a Post Graduate Diploma in Legal Practice.

When asked as to what drives her as an inspector, she referred to the words of Warren Buffet; "*Someone is sitting in the shade today because someone planted a tree a long time ago.*" She acknowledged the women in civil aviation who had paved the way and broken barriers, setting extraordinary milestones and showing first hand, that it was possible to accomplish remarkable things. These women were her inspiration. She further went on to say that she now sat in the shade of the trees planted by the women that had gone before her and she hoped that one day she would be that 'tree' for another young girl or woman■

Ms. Peniana Waqavanua
(Aviation Security & Facilitation Inspector)

Importance of Tool Control for Safety

Technology can assist, but not replace, human thoroughness in controlling this foreign object damage hazard.

Aircraft maintenance is an unforgiving way to make a living.

As James Reason and Alan Hobbs say in their book, Managing maintenance error: a practical guide, 'If some evil genius were given the job of creating an activity guaranteed to produce an abundance of errors, he or she would probably come up with something that involved the removal and replacement of large numbers of varied components, often carried out in cramped, ill-lit spaces, with less-than-adequate tools, and usually under severe time pressure.'

Leaving tools or fasteners in the component or system being serviced comprises about 10 per cent of maintenance error, Reason and Hobbs discovered. Like other categories of human error, losing tools is better controlled by systemising than by moralising. And the good news is that systems and technologies exist to control it. They are a better solution than relying solely on individual diligence which, as Reason and Hobbs point out, already has too many enemies in the hangar.

Stowaways and saboteurs

Lost tools have often resulted in embarrassment and expense, and sometimes in tragedy.

- On 23 October 2020, a Jetstar Airways Airbus A320 was taking off from Brisbane when the crew reported feeling a vibration and hearing a 'popping' noise that rapidly increased in frequency and volume. At the same time, the aircraft veered to the right of the runway centreline despite the first officer applying full left rudder. The captain immediately selected reverse thrust and brought the aircraft to a stop. During the incident, passengers, an air traffic controller and the crew of the following aircraft saw a burst of flames coming from the right engine. An inspection immediately after found metallic debris in the tailpipe of the right engine. When it was dismantled, a screwdriver tip was found in the engine's combustion section. It had done significant damage to the high-pressure compressor. Based on the aircraft's maintenance records, the tip had been in the engine for 112 flights. It nicked and scratched stator vanes and compressor blades, one of which eventually detached, causing the engine failure.
- On 3 November 2015, a Eurocopter AS365 N3 Dauphin landed after a maintenance test flight at Jandakot Airport with chunks missing from the leading edges of one rotor blade. A spanner was found 43 metres away on a taxiway. The Australian Transport Safety Bureau (ATSB) determined it had been left in the rotor head area and was likely ejected during the aircraft start up.

ON SEVERAL OCCASIONS WE DIDN'T GO HOME UNTIL THE TOOL WAS FOUND.

- On 28 February 1998, just after take-off, the crew of a Boeing 767 heard a series of loud bangs and the right engine exhaust gas temperature indicator rose rapidly into the red range. The right thrust lever was retarded to idle and temperature indications returned to normal. The crew declared an emergency, returned to the airport and landed safely. When the engine was removed for further inspection, a replaceable Philips screwdriver tip was found in its core. It was the first flight after the aircraft had undergone an 'A' maintenance check.
- Other accidents and incidents include a torch left in a Boeing 737-300's wheel well that became lodged in the landing gear mechanism, preventing the pilot from raising the undercarriage; a Boeing 747 where the undercarriage failed to retract because a pair of pliers had been left in the right body gear-up lock during maintenance; and a bent screwdriver found in the wreckage of a Vickers Viscount that crashed in Northern Ireland in 1957.

Tools don't have to be left inside an aircraft to damage it. The ATSB found tools and equipment were the second most common cause of foreign object damage (FOD) reports, accounting for about 19 per cent of cases.

A place for everything: solutions

Tool control is any system that monitors where tools are and/or who is using them. Its guiding principle is that all tools be returned at the end of the day or job.

'The reason we have tool control is so loose tools don't provide an extra hazard to the aircraft environment,' Esso Australia Aviation Safety Manager Mike Hutchinson says.

There are 2 distinct schools of thought on tool control. Strict centralised tool control is a tradition in military aircraft maintenance where no private tools are allowed and everyone shares a central tool kit, known as a crib. In civilian operations, engineers and technicians have traditionally used their own tools.

'I started in the navy, which had a quite rigorous tool system,' CASA Senior Engineer Maintenance Gustav Anderson says. 'Every time a job was opened on an aircraft, the tool control room would open and you would ask for each tool you needed. As you got your tools, dog tags accumulated under your name and at the end of the day these had to be cleared and signed off. On several occasions we didn't go home until the tool was found.'

CASA says relatively little about tool control specifically but instead focuses on the safety standards that must be met in aircraft maintenance. **Civil Aviation Advisory Publication 30-04 v3.0 August 2020** states, *'Tools and equipment should be controlled so that their location is always known. There should be a procedure to ensure that at shift changes, or when aircraft leave the organisation, all tools and equipment are accounted for.'*

Tool control methods include:

- Shadow boards – these display the outline of any missing tools
- Shadow boxes – these use foam cut-outs to hold tools securely and also display the outline of missing tools.
- Tool folders/pockets – these have a pocket for each tool and so indicate missing tools
- Tool tags – this involves tokens being issued with the tools but kept in the tool store or crib under the borrower's name. Tools are exchanged for tokens on return and all tokens must be cleared at the end of the job or day.
- Barcoding – where a tool is checked out to a known person using the same technology used at point of sale in supermarkets. Personal barcodes can also be used to control access to toolboxes and cribs.
- Radio frequency identification (RFID) – involves tools being tagged with RFID chips. These are used to simplify check-out and return of tools.
- Colour coding – may be used in conjunction with any of these systems to allow tools to be more easily seen and removed from a job and to identify if tools are missing from their storage■

Source : Flight Safety Australia, author Robert Wilson

Navigating the Challenges & Limitations of Grass Runways in Fiji's Aviation Landscape

Grass runways are an essential part of Fiji's aviation sector, particularly in remote and island communities where traditional paved runways are not practical or economically feasible. Although grass airstrips facilitate essential air transport links and support various activities, they also present unique challenges and limitations that require careful consideration by aviation stakeholders. It is crucial to understand these factors to effectively manage grass runways and ensure safe and reliable aviation operations across Fiji. Fiji has eight grass runways, namely Vanuabalavu, Cicia, Moala, Gau, Koro, Yasawa, Mago, and Malololailai Aerodrome. These aerodromes serve aircraft weighing up to 5700kg.

Figure 1. Cicia Aerodrome

The grass runway

Figure 2. Mago Aerodrome

The history of the first grass runway to be constructed in Fiji dates back to the early development of aviation infrastructure in the region. While specific details about the very first grass runway may be challenging to ascertain due to limited historical records, it is possible to provide an overview of the general context and milestones in Fiji's aviation history.

Fiji's aviation sector has its roots in the early 20th century when aviation technology was still in its infancy. The establishment of aviation infrastructure, including airstrips and runways, was driven primarily by the need to support air travel, cargo transport, and communication between Fiji's islands and the broader Pacific region.

One of the earliest instances of grass airstrip construction in Fiji likely occurred during the interwar period, around the 1920s and 1930s, when aviation pioneers and colonial authorities recognized the strategic importance of air transport in connecting Fiji's scattered islands. These grassroots efforts would have involved clearing and leveling suitable areas of land to create makeshift runways capable of accommodating small aircraft of the time.

Figure 3. Yasawa Aerodrome

The construction of grass runways in Fiji gained momentum during World War II, as the islands assumed greater significance as military bases and staging points for Allied forces in the Pacific theater. Military engineers and laborers expanded and upgraded existing airstrips while constructing new ones to accommodate the growing fleet of military aircraft. These grass runways played a crucial role in supporting wartime operations, including reconnaissance missions, troop deployments, and supply deliveries.


Figure 4. Gau Aerodrome

Following the war, Fiji's aviation infrastructure underwent further development as commercial air travel expanded and civilian demand for air transport increased. Grass runways continued to serve remote communities and rural areas where the construction of paved runways was economically unfeasible. Throughout the mid-20th century, efforts to improve and maintain grass airstrips were led by government agencies, local authorities, and aviation enthusiasts passionate about advancing air transport in Fiji.

One significant milestone in Fiji's aviation history occurred with the establishment of Nausori International Airport (formerly known as Nausori Airport) near Suva, the capital city. While Nausori Airport began as a grass airstrip in the early 1940s, it underwent several upgrades and expansions over the years to become one of Fiji's major aviation hubs, for domestic and international flights .

In the decades that followed, Fiji continued to invest in its aviation infrastructure, gradually transitioning from grass runways to paved surfaces at key airports like Lakeba and Rotuma aerodromes. However, grass runways remain in use in certain remote and rural areas, reflecting their enduring importance in supporting air transport accessibility and connectivity for communities beyond the reach of conventional airports.


Figure 5. Koro Aerodrome


Figure 6. Moala Aerodrome

Today, while Fiji boasts modern airports equipped with advanced facilities and technology for Nausori and Nadi, the legacy of the first grass runway construction serves as a testament to the pioneering spirit and resilience of Fiji's aviation pioneers in laying the foundations for the nation's aerial connectivity and transportation network.

Grass runways will limit operations

Grass runways often make sense at smaller airports. They are easy to set up and cheaper to maintain. They will place limitations on airfield use, however. In particular, it will affect the aircraft that can operate there, with strict limits on aircraft size and weight.


Figure 7. Ono-i-Lau Aerodrome

In Fiji, grass runways play a significant role in providing access to remote and rural communities, especially on outer islands where traditional paved runways may be impractical or economically unfeasible. However, grass runways in Fiji can limit operations due to several factors:

1. **Weather Sensitivity:** Grass runways are more susceptible to adverse weather conditions compared to paved surfaces. Heavy rainfall, cyclones, or extended periods of wet weather can render grass runways waterlogged and muddy, making them unsuitable for aircraft operations. As a result, flight schedules maybe disrupted or flights canceled, impacting the reliability and accessibility of air transport services.

2. **Maintenance Requirements:** Grass runways require regular maintenance to ensure their integrity and usability. This includes mowing, leveling, and treating the surface to control vegetation growth, maintain proper drainage, and prevent erosion. However, limited resources and logistical challenges may hinder timely maintenance efforts, leading to deteriorating runway conditions and reduced operational availability.

3. **Wildlife Hazards:** Grass runways in Fiji may be more susceptible to wildlife incursions compared to paved surfaces. Vegetation and grassy areas adjacent to the runway can attract wildlife, increasing the risk of bird strikes or encounters with other animals during aircraft operations. Wildlife management measures may be necessary to mitigate these hazards and ensure the safety of flight operations. However, there have been nil bird strike reports received till today.


Figure 8. Matololailai Aerodrome

FUNCTIONS OF PERSONNEL LICENSING

APPLICATION — Submit relevant forms with supporting documents (Human Factors/Performance certificate) with relevant fees paid.

***Application Forms can be accessed from our website www.caaf.org.fj**

EVALUATION — Form is checked for completeness, accuracy and payments, then assessed as per the Standard Document.

PROCESSING — Licence is processed and forwarded for endorsement .

it takes 3 working days for renewals to be processed and 5 working days for issuance of licenses from date of receipt

ENDORSEMENT — Licence is verified and endorsed. Post procedures is conducted.

COLLECTION — Licence is ready for collection.

CAAF
ISO 9001:2015 CERTIFIED
Civil Aviation Authority of Fiji

Contact CAAF
Office Number: (679) 892 3155
E-mail: info@caaf.org.fj
Website: www.caaf.org.fj

Purpose

In Fiji and for the purpose of Personnel Licensing Standards Document, CAAF is the Licensing Authority that by law has the following licensing responsibilities:

- Assessment of an applicant's qualifications to hold a licence or rating;
- Issue and endorsement of licences and ratings;
- Designation and authorization of approved persons;
- Approval of training courses;
- Approval of the use of flight simulation training devices and authorisation for their use in gaining the experience or in demonstrating the skill required for the issue of a licence or rating; and validation of licences issued by other ICAO Contracting States.

List of Licences issued by CAA of Fiji

Flight crew

- Flying Training Permit
- Private pilot
- Commercial pilot
- Airline transport pilot.

Other personnel

- Aircraft maintenance (engineer);
- Air traffic controller;
- Flight operations officer/flight dispatcher;
- Aeronautical station operator■

ALWAYS ENSURE TO CHECK YOUR LICENCE/ PERMIT/CERTIFICATE AND VALIDATION EXPIRY DATES.

Navigating the Challenges & Limitations of Grass Runways in Fiji's Aviation Landscape

cont.. from page 13..

Challenges when using grass runways

There are several challenges for the certification body, the pilots and aerodrome operators when using grass runways. The main ones include:

- The global practice aims to harmonize member states that have grass runways by standardizing applicable requirements concerning operations, visual aids, rescue and firefighting and maintenance;
- Timely transportation of maintenance fuel;
- Regular maintenance is required. Although grass runways cost much less than paved runways, they still require regular checking and maintenance. This includes mowing to keep the surface smooth and free of debris;
- Grass runways are more easily damaged. Bad weather, or bad landings, can more easily damage a grass runway;
- Pilots must pay extra attention to weather conditions as grass surfaces are naturally more dynamic than paved surfaces. Airfield workers and pilots need to be aware of and ensure this is regularly checked. Pilots must also adjust for landing; perhaps land at a lower speed and visually inspect the runway surface for damage.

Despite these challenges and limitations, grass runways play a vital role in supporting essential air transport services and fostering connectivity in Fiji's remote communities. Their flexibility and cost-effectiveness make them indispensable assets in the country's aviation infrastructure portfolio, facilitating access to medical care, education, and economic opportunities for underserved populations. Moving forward, addressing the challenges associated with grass runways requires a coordinated effort among government agencies, aviation stakeholders, and local communities to ensure sustainable and resilient aviation infrastructure across Fiji's diverse landscape. By investing in infrastructure upgrades, implementing effective maintenance practices, and enhancing emergency response capabilities, Fiji can maximize the safety and reliability of its grass runways while fostering inclusive development and connectivity for all its citizens■

Source : CAAF Library (Ground safety Audit Folders)

SPACE WEATHER

The most interesting dangerous weather you've probably never had to think about – until now.

Space weather is activity on the sun's surface resulting in a great burst of ionizing radiation and powerful magnetic fields being flung out into the solar system and, occasionally, towards Earth.

The Earth's atmosphere and magnetic field usually shield us from the everyday effects of the sun. But when powerful solar explosions occur, the potential effects on our planet and technology range from the beautiful to the incredibly disruptive – and can have very serious outcomes for the critical systems used in aviation.

To understand how the sun's activities can affect aviation, first we need to understand the role of Earth's ionosphere. The ionosphere extends upwards from 80km above Earth's surface and consists of charged particles. Satellite-based communication, navigation, and surveillance systems rely on transmissions of signals *through* the ionosphere. Solar events that modify the density and structure of the ionosphere can make the signals of one or more satellites impossible to track. This 'loss-of-lock' may result in reduced positioning accuracy or, in worst case, a denial of global navigation satellite system (GNSS) service.

High-frequency (HF) radio communications also utilise the ionosphere, with radio waves bouncing off it to enable long-range communication systems. When solar activity results in the ionosphere losing its ability to reflect those waves, HF communications are disrupted.

It's not only navigation and communications that can be affected by space weather. During a solar radiation storm, highly energetic charged particles can slip past the earth's magnetic field, resulting in amazing shows of aurora or, more seriously, potentially dangerous levels of radiation affecting aircraft occupants and on-board electronics.

During an extreme space weather event, these types of effects could occur simultaneously. The last recorded was the 'Carrington event' of 1859, when brilliant aurora were observed in tropical latitudes. Telegraph systems across Europe and North America failed as currents were induced along the lines by changes in Earth's magnetic field. The likelihood of a similar event occurring in the next 50 years is estimated to be around 30 percent, with the global economic impact likely to be trillions of dollars.

Recognising the technical and safety risks of space weather, the International Civil Aviation Organization (ICAO) Meteorological Panel set up an advisory system to alert the aviation industry on probable occurrence of space weather events caused by the sun, and expected impacts on the system.

These space weather advisories will be provided from late 2019, issued as necessary, and covering effects on HF or satellite communications, on GNSS-based navigation and surveillance, and on the intensity of radiation levels affecting crew and passengers.

Anticipating and planning for degraded performance of communication and navigation systems adds to the margins of safety. Often degraded performance unavoidable, but being ready to respond to it with a pre-conceived plan is the safest way to go.

For more information on space weather and the new space weather advisory system for aviation, search for 'space weather' on CAA NZ website.

Source : Vector (CAA, NZ)

Cabin Safety for Passengers

Cabin Safety

Cabin safety contributes to the prevention of accidents and incidents, the protection the aircraft's occupants, through proactive safety management, including hazard identification and safety risk management, and the increase of survivability in the event of an emergency situation.

When you're travelling on an aircraft, there are a number of regulations that help to keep you safe. Read more below about safety briefings, seat belts and emergency exit seating.

Safety briefings

Knowing what to do in an emergency can increase the chances of your survival.

The safety briefing and the safety information card provided near your seat give vital information on the location of exits and emergency equipment. As this can vary from one aircraft type to another, it's important to pay attention to the safety briefing and read the safety card every time you fly.

You should check the location of your nearest emergency exit, which may be behind you (count the rows). Safety equipment will typically include life jackets, oxygen masks, seat belts/harnesses and floor lighting.

The safety briefing will generally include information on the use of portable electronic devices, storage of hand baggage, and the need for your seat to be in the upright position with the tray table stowed and window shade open during take-off and landing.

Seat belts

Your seat belt must be fastened whenever the "seat belt" sign is on. This includes during taxi, take-off, landing, turbulence, and whenever the captain has illuminated the "seat belt" sign. You must comply with all the lighted signs and instructions from your crew, so if the seat belt sign is illuminated, you must fasten your seat belt.

When the seat belt sign is not illuminated, it's still highly recommended to keep your seat belt fastened.

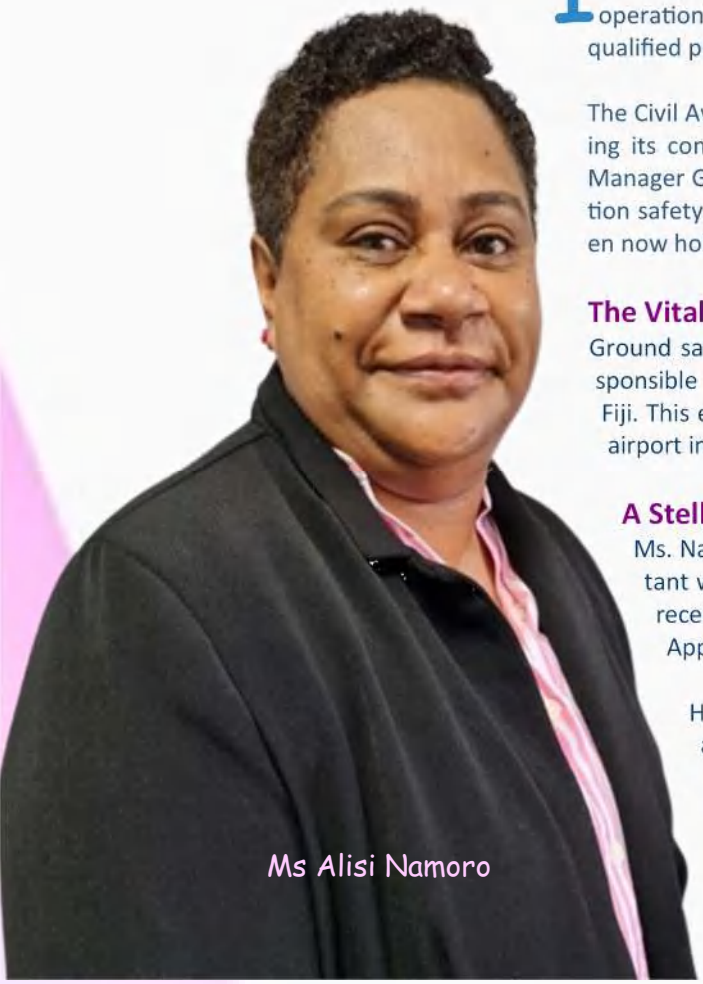
You should adjust your seat belt so that it is tight but comfortable, with the buckle the right way round so that it can be released easily. If you use a blanket, fasten the seat belt over the blanket so cabin crew can see that your seat belt is fastened. After landing, you must wait until the seat belt sign is turned off before unfastening your seat belt.

Emergency exit seating

Some passengers may not be allowed to sit next to an emergency exit. This is to ensure that if the emergency exit is needed, the exit can be opened, and the aircraft evacuated, as quickly as possible■

Source: Civil Aviation Authority Fiji, CAA New Zealand.

CAAF Appoints Executive Manager Ground Safety


Ms Alisi Namoro

In this dynamic world of aviation, safety is a non-negotiable element in day to day operations. Every decision must prioritise safety. To achieve this goal, appointing qualified personnel to leadership roles is crucial.

The Civil Aviation Authority of Fiji (CAAF) recently took a significant step in solidifying its commitment to safety by appointing Ms. Alisi Namoro as the Executive Manager Ground Safety (EMGS). This appointment not only strengthens Fiji's aviation safety standards but also achieves a milestone in gender balance, with women now holding half of the CAAF's Executive Management positions.

The Vital Role of the Executive Manager Ground Safety:

Ground safety is a cornerstone of aviation safety. The EMGS leads the team responsible for the safety oversight of aerodromes and air navigation services in Fiji. This encompasses a wide range of responsibilities, from safeguarding critical airport infrastructure to ensuring airspace safety.

A Stellar Track Record in Aviation

Ms. Namoro's impressive journey began in 1990 as an Air Traffic Control Assistant with the former CAAFI. In 1995, she became the second woman in Fiji to receive her Air Traffic Controller (ATC) license, achieving her Aerodrome and Approach Control License at Nausori Airport.

Her dedication to continuous learning is evident in her subsequent achievements. In 1999, she obtained her Aerodrome, Approach and Oceanic Control Ratings at Nadi International Airport and as communication systems for Fiji's ATC advanced in the early 2000s, Ms. Namoro, following successful completion of the pre-requisite training, attained additional ratings in High Frequency communications for the Nadi Flight Information Region and Flight Information Services for the Fiji domestic sector.

Her leadership qualities were recognized in 2004 when she was promoted to Air Traffic Management Coordinator, leading a team of 10 on every shift. In 2013, she transitioned to an administrative role, overseeing Search & Rescue and Quality Assurance.

Ms. Namoro's commitment to aviation safety led her back to CAAF in 2016 as an Air Traffic Management Inspector. Her expertise was further acknowledged with a promotion to Senior Navigation Service Inspector in 2022. Finally, in February 2024, her well-deserved appointment as Executive Manager Ground Safety marked a new chapter in her illustrious career, spanning over three decades. With her background in Air Traffic Control and regulatory oversight, Ms. Namoro is poised to lead with distinction in her new role.

Challenges and Looking Forward

Despite advancements, challenges remain in aerodrome and air navigation service operations. However, Ms. Namoro is determined to leverage her experience to build upon the strong foundation laid by her predecessors. Her focus is to ensure the Ground Safety Department is well-equipped to meet the expectations of the public, stakeholders, and the Fijian government.

Safety Soars High at CAAF

The appointment of Ms. Namoro as EMGS underscores CAAF's unwavering commitment to prioritising safety in Fijian aviation. With her leadership and expertise, the future of ground safety in Fiji is in good hands■

Laser Pointing Incidents on the rise

A total of 26 laser light related incident reports were received by CAAF for the year 2023 and while this article was prepared, more reports were received. This is more than twice the number of reports received for 2022. These incidents normally occur during take-off and landing.

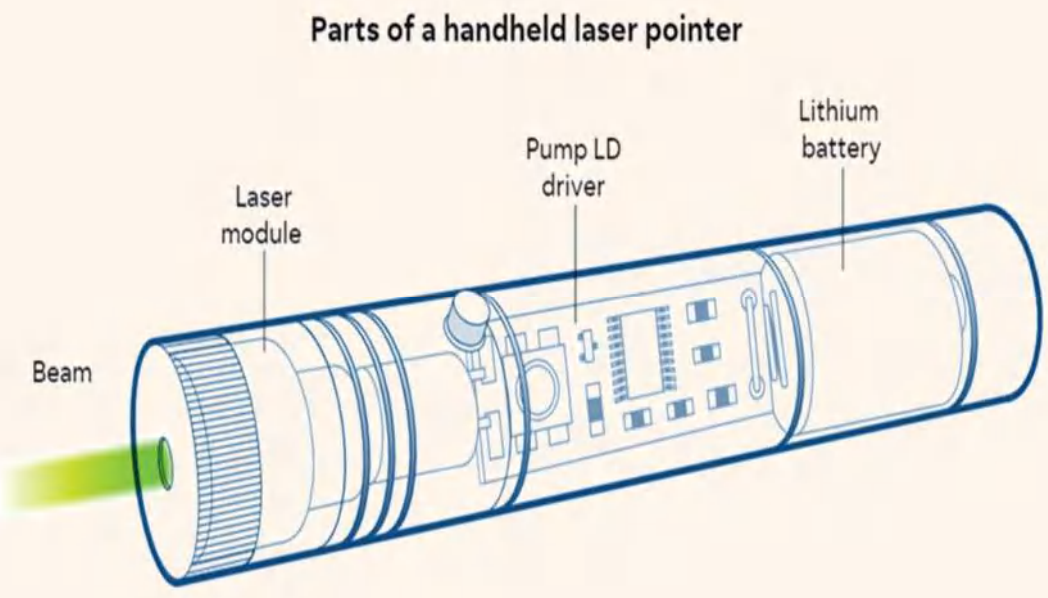
What is Laser light pointing and why is it dangerous?

Refer below article from USA Today which highlights what a handheld laser pointer is and also shows graphically, the impact it has when pointed to the aircraft.

What is a handheld laser used for?

Introduced in the 1990s, the small laser pointers that are used for business presentations, entertaining pets or pointing out stars might be the most familiar type for ordinary people. Affordable higher-powered laser pointers also are widely available online.

And some people use the laser pointers on aircraft.



How lasers can affect pilots

"If a laser hits the plexiglass windshield of an aircraft, the light "disperses even more" and can illuminate the whole cockpit, temporarily blinding pilots, St. Louis Metropolitan Police Officer Doug Reinholz said in an FBI video.

Source FAA; LaserPointerSafety.com; Boeing

The majority of laser-pointing incidents occur at night, during takeoffs and landings. These are two most critical times for pilots, who have less time to react when they are close to the ground.

In Fiji, the 96% of the laser incident reports were received for Nadi International Airport, whereby laser was pointed from nearby areas and areas as far as Tomuka in Lautoka.

As mentioned by USA Toady (above), majority of these incidents occur at night and in Fiji, this is no exception. Below graph shows incident reports received at each hour for 2023.

Currently, CAAF is running awareness by putting up posters and billboards as well as advertisements on TV and Cinema.

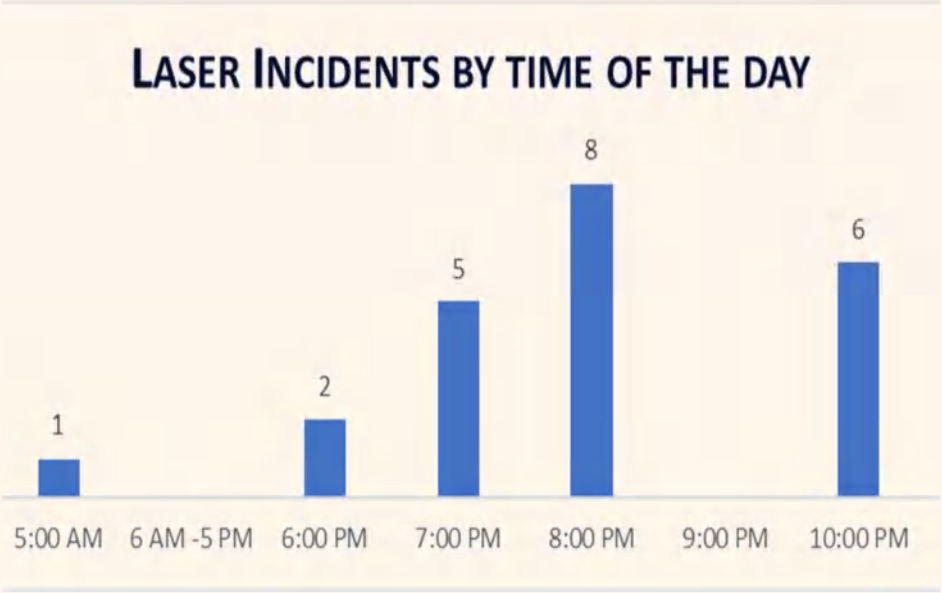


Figure 1:Posters being placed at Nadi Bus Station

Figure 2: Billboard at the traffic light in front of Mount St. Mary's School

"Any person who is caught pointing laser lights at aircraft is liable to a fine of up to $1000 and/or imprisonment for a term of up to 6 months."

Sources in reference to this article : USAToday; FAA; Loehrke 2023; & CAAF Data

Image: Shutterstock

(Non-Alcoholic Fatty Liver Disease)

In the past the most common cause of Fatty Liver Disease was alcohol abuse and as such only seen in adults.

But now this has been surpassed by Non-Alcoholic Fatty Liver Disease, and is being detected increasingly in children who largely do not consume alcohol.

Most people with fatty liver disease don't even know that they have it. It is a silent epidemic.

One out of four people have fatty liver disease.

Because the liver is the only organ that could repair itself, it has a lot of resilience to injury and early disease is asymptomatic. And when symptoms show up the liver is already in a decompensated, irreversible stage of damage. Eg. Cirrhosis, Liver failure and Liver Cancer.

Because it is largely a silent disease, screening is very important earlier on. Early disease is reversible, but late disease is not.

Do you have Metabolic risk factors?

These factors are Type 2 Diabetes Mellitus, Obesity, High Cholesterol, Sleep apnea, Polycystic Ovarian disease.
These conditions mean you very likely also have fatty liver disease.

Early Warning Signs

As it is largely asymptomatic, sometimes the only symptom is Fatigue or exhaustion even after a good rest.

Late Warning Signs

Jaundice (yellow eyes), fluid distension in the abdomen (ascites), bleeding from GIT tract from esophageal varices.

Role Of The Liver

Everything that is absorbed from the Gastro-intestinal tract is taken to the liver for processing before it is released into the rest of the body.
The liver is involved in every metabolic process the body has especially from a macronutrient processing perspective.

Glucose metabolism – the liver ensures glucose balance is maintained by storing excess as glycogen and fat.

Fat Metabolism - the liver breaks down dietary fats into fatty acids

Protein Metabolism – the liver ensures that amino acids can be converted into energy.

Pathogenesis Of Fatty Liver

Fatty liver, as the name implies, is excessive fat storage in the hepatic cells. When grossly viewing a sliced up healthy liver tissue, it is dark red in color, but it turns whitish when excess fat is stored in hepatocytes.

Fats in the liver cells cause inflammation within the liver, which over the long term leads to fibrosis and scarring of the liver tissue, a condition called Cirrhosis. Cirrhosis reduces liver function leading to liver failure and ultimately liver cancer.

A Confusing Terminology

One could be mistaken when hearing the term fatty liver to assume that the cause is too much fat in the diet and in the blood.

The cause of fatty liver is Sugar. The excessive intake of table sugar, fructose and refined carbohydrates flood the blood stream with glucose, which is converted by the liver into fats.

Fat intake in the diet have very little or nonexistent effect on the pathogenesis of fatty liver disease.

Metabolic Associated Fatty Liver Disease

In an attempt to simplify and clarify the meaning of fatty liver disease, many organizations are changing the terminology from Non-Alcoholic Fatty Liver Disease (NAFLD) to Metabolic Associated Fatty Liver Disease. This terminology is a way of roping in Metabolic Dysfunction as the underlying cause of fatty liver disease rather then saying what it is not in the term Non-Alcoholic Fatty Liver Disease.

How Fatty Liver Affects Other Organ Systems and Our Overall Longevity

The most common cause of death in people with fatty liver disease is not cirrhosis, liver failure or liver cancer, but Cardiovascular Disease. ie. Heart Attack and Stroke.

This is because Fatty Liver is a major risk factor in getting cardiovascular disease. Fatty liver is also a risk factor of all cancers, not only liver cancer.

A Recent Phenomenon

Mankind never had this disease in its early history. Fatty liver was first described in Minnesota, in 1980 where it was linked to Metabolic Syndrome, Obesity and Diabetes Mellitus. The underlying cause is the overconsumption of sugar and refined carbohydrates in our diet.

Diagnosing Fatty Liver Disease

1) Ultrasound Scan of the liver will show increased parenchymal echoes.
2) Liver Function Test Blood Test

Liver enzymes of GGT, ALT will show high levels.

Metabolic Syndrome- inclusion criteria

1) High Fasting Blood Glucose (normal < 5 mmol/L)
2) Low HDL Cholesterol (normal > 1 mmol/L)
3) High Triglycerides (normal < 1.7 mmol/L)
4) High Waist Circumference - measured just above level of belly button (normal – males < 40 inches, females < 35 inches)
5) High Blood Pressure (normal < 130/85)

If a person has 3 or more of the above criteria, Metabolic Syndrome exists and there is a high risk of developing Chronic Diseases like Type 2 Diabetes Mellitus, Cardiovascular Disease, Cancers, Alzheimer's disease, Hypertension, Chronic Kidney Disease and Polycystic Ovarian Disease.

A person with Metabolic Syndrome also has a high risk of Fatty Liver Disease.

Treatment Of Fatty Liver Disease

The treatment is to lose weight down to a normal Basal Metabolic Index (BMI < 25) and that is achieved by reducing the dietary intake of Sugar, Fructose and refined carbohydrates or processed foods. A good rule is to consume whole foods grown in our gardens and that includes red meat, fish, chicken and eggs.

Exercise alone does not result in weight loss, however its role in maintaining good overall health is important to mention. One cannot exercise away a bad diet.

Animal products provide all essential nutrients required by our body - fats, vitamins, minerals, essentials amino acids. Meat has been unnecessarily vilified in recent times even though historically human beings have been meat eaters from the beginning of time.

Plant based foods cannot provide all essential nutrients we require and supplementation with vitamins maybe necessary. eg. Vitamin B12■

Author: Dr Isireli Biumaitotoya

CERTIFIED ISO 9001

Civil Aviation Authority of Fiji

Do not walk airside if not accompanied by trained airport personnel.

More info @ www.caaf.org.fj