

Manawatu Microlight Club Newsletter for November 2011

www.manawatumicrolightclub.org.nz/

Editorial Comment

Included in this month's newsletter are articles from Frank, Barry and a fact sheet researched and submitted from Leo on the Sky Arrow.

Coming in the next issue will be the first of a multi part article from Peter Dunning on his Zodiac Build. (For those members that don't know Peter he has a long past association with Pine park flyers group) This is appropriate as we will be seeing this aeroplane soon in Feilding.

As your President I would like to thank all the club members stepping up and generously giving time to the maintenance of the club fleet, hangar and clubrooms. Craig for prompt and thorough inspection MMC Stan for cleaning up the mounting frame on MMC's engine and the lawns Phil and John for re-tensioning the fabric on the wings MMC and re-soldering plug for external jump on MMC and Phil for his work on XPA choke cables, and Peter Gene for cleaning our club signs up they look great.

Cool article from Frank

Hastings or Bust...

Having heard that rumours were circulating the club about "Balls of Steel", I thought I'd better set the record straight...

A couple of years ago, I attended the Taildragger Fly-in at Hastings, my first long-range trip in the Drifter. It was a great trip, and lots of fun. Last year, I would have gone again, except that the tailwheel spring broke. So, this year, I was definitely planning to go (if the weather was OK).

Of course, on the Saturday morning, the weather was only slightly better than marginal, with a moderate Westerly. But I had been following the forecasts for the previous week, and could see that the weather was going to improve, and it was going to be good in Hastings. And there was a good chance that it would stay clear over Sunday morning. I planned 3 different routes to Hastings, depending on the weather, and loaded them on the GPS; direct via the Norsewood gap if the weather was good, overhead Athol's and direct to Hastings if it's a bit claggy, and down the Eastern side of the valley if there's a strong Westerly. Even if there's a 15kt headwind, a full tank will give me plenty of fuel to get to Hastings.

So, I arrived at the airfield Saturday morning fairly early, with a nice clear patch visible over the Saddle, and a bit of a cool breeze. Drag all the aircraft out, put the Arrow and Hanuman back again, all the while keeping an eye on what's happening over the Saddle. No change really, so that's good. Fill up the Drifter with fuel, fill up the fuel cans, tie them to the back seat, tie my overnight bag on top. A murky cloud thing is hanging around PN, but it's not moving. A good pre-flight walk-around. A couple of extra trips back to the car or the overnight bag to get stuff I realise I'll want during the flight, or to put away stuff I realise I won't want, or to get stuff I put away that I do want after all. Is that murky cloud moving? No, not really. Thinking ahead, I start the Drifter *before* putting on all my warm clothes... it starts 3rd pull ☐ ☐ . Back to the clubrooms, put on the

rest of the clothing, set up my new phone to broadcast my GPS position every 10 minutes, phone to say I'm on my way, kneeboard, GPS, battery pack, yada, yada. Finally I'm ready. And wishing I'd been ready half an hour ago, when the weather was marginally better. The wind's now a bit stronger, and there's a shower falling out the bottom of that murky cloud over PN, and a new murky cloud forming north of Ashhurst. Go? Or no go? The beauty of the Drifter is that any paddock will do for a landing. It's only 10 minutes to the Saddle, although perhaps 20 minutes coming back. I'm well wrapped up, so I can manage 20 minutes of cold and wet if I can't get through the Saddle. There's a strip at Hiwinui. If I get through, and the weather is no better over the other side, it's not far to Dannevirke or Athol's (or any other paddock), to sit it out until the forecast improvement arrives. OK, let's go. But I'll chicken out if the clag over the Saddle lowers, or if it is horrendously lumpy-bumpy, or whatever.

All aboard... starts first pull, taxi out to 28 Grass, run up, and away we go... a short run and climbing to 500AGL before the fence... plenty of wind. Downwind, and rocketing along... looks like we have a 20kt tailwind. Approaching Ashhurst, a shower tests my resolve, but it's light and gone quickly, and I can now see through the Saddle, and the weather on the other side looks good. Climb to 1800ft, then 2500 through the Saddle, and the turbulence is no big deal... I've had worse. Continue following the GPS to Athol's and contemplate a high-speed buzz over the strip, but the usual Athol's-place lumps and bumps (and the fact that nothing happens at high speed in the Drifter) dissuades me. Instead, I'm heading off to the eastern side of the valley to get out of the lee of the Ruahines. The weather this side is much better, with a high overcast and no showers. And I've still got a pretty good tailwind component.

Dannevirke arrives quickly, and I track round the east and on past Norsewood. I'm starting to get cold now. Not really cold, but enough to be unpleasant. But it's still a pleasure to be heading off to a distant fly-in. On past Waipukurau (there's a plane down there taxiing out) and I'm tempted to land to warm up. It really is cold! But, from past experience, I reckon I won't warm up for an hour, and *then* I'll just have to get cold again. So, suck it up and trek on past Waipawa, more or less following the railway, a good 74kts showing on the GPS, over Lake Poukawa, and start looking for the airfield. As usual, the airfield changes from being invisible to being completely bloody obvious within a blink. There's lots of aircraft there. Time to set up for landing, and as luck has it, a 180 is descending into the circuit, so I just follow him. The wind is still pretty good from the NW, so we land on 29. A nice short short landing, to psyche out the competition.

We're there! And really really cold! I guess I'm the coldest person in at the fly-in, probably in Hastings, maybe even all the Hawkes Bay. Why is everyone looking at me? Is it because I'm the only person for a hundred miles in 4 layers of thermals and wool and overalls and ski clothes, or because I'm the only one shivering in the Hastings sunshine?

So, getting back to the point of this article... no balls of steel... just ice.

Frank

[Barrys article Dawn Raid next mission?](#)

A Trip to Koputaroa

Bill Steel convinced me to get out of bed a ~~little~~ lot earlier than unusual to fly to Pete Kernohan's barbecue and mini Fly - In which took place last Sunday. I astonished myself by getting to Taonui before 8.00am to find that Bill had attended to fuel and pre flight so we set off in good time to meet the 9.00am start. However, as we went South, we were confronted with scattered rain showers. I conferred with Bill who was in the back seat, but he reminded me that I was PIC and must decide what to do. No help there! I elected to return to Feilding and did an about face, but Stan, who was ahead of us, reported clearing weather, so I reversed my decision and turned South again. However, I encountered shower activity once again, so turned for home, yet again. When I told Stan of my decision, he reported being in clear air near the coast, so I turned yet again and headed West. By this time, Bill was feeling a little queasy because of the constant turns and I'm sure the other pilots who were in the area were rather confused about our whereabouts. Anyway, we did get to Koputaroa and were pleasantly surprised to see the number of aircraft on the ground as well as those who'd elected to drive there.

Pete and Pam put on a very good spread and attendees swapped yarns whilst filling their bellies. Several pilots engaged in a debate about the exact whereabouts of the 4 points of the compass with widely differing opinions until John Turk settled the issue by producing his compass. I must confess to misplacing East by a considerable margin. The return trip was less eventful as we experienced fairly clear skies until we approached Taonui. As the field came into view, it was obvious that we'd be lucky to land ahead of an approaching shower. Bill and I were the lead aircraft of 3 others heading for the field and each was keen to get on the ground before the rain, so we had an interesting few minutes sorting out exactly who had priority. However, unflappable Bill got us safely on the ground - just in time. All in all, a really good experience and a well organised, well attended function, thanks to Pete and Pam.

[Sky Arrow A bit of history from Leo](#)

[Information](#)

[The Sky Arrow Line](#)

[Gallery](#)

History of the product

The Sky Arrow aircraft is the result of an important research program supported by the Italian Government. In 1990 I obtained a research contract, called Rondine Project, from the Italian Government for the industrial design of a "remotely controlled aerial aircraft system", the Sky Arrow. The Rondine project started in 1991 and ended in 1996 when the Sky Arrow was fully certified by the Italian Airworthiness Authority (RAI). The Sky Arrow has been the first all carbon-fiber aircraft to be certified for general aviation in the world.

In 1997 the Italian Government approved a company's project for the design of a system called RAWAS (Remotely Assisted Working Aerial System), which uses Sky Arrow

Read the articles

["Eyes In the Sky"](#)

Alton Marsh, AOPA 2007

["Sky Arrow Special LSA"](#)

Light Sport & UL Flight Magazine, Nov. 2006

["Affordable Aviation: No longer an Oxymoron!"](#)

Tim Alderman, Sheriff Association of Texas

["Up, Up And Away"](#)

Mary Wymer, Research Magazine 2004

["Yes, It Is A Real Plane"](#)

Alton Marsh, AOPA 2000

aircraft as aerial platforms and aims to perform patrolling missions, environmental monitoring and territory control.

"NOAA Technical Memorandum"

National Oceanic and Atmospheric Administration

"The Sky Arrow ERA"

NOAA

The Sky Arrow aircraft

The Sky Arrow aircraft has been produced since 1996 by *Iniziativa Industriali Italiane* (or *3I*), an Italian company with a long and successful experience in manufacturing FAA/FAR23 certified airplanes.

The Sky Arrow has two seats in tandem configuration, a layout that allows the pilots to have up to 300° of visibility. The wing is above the fuselage and a pushing propeller is placed behind the cabin, as a result pilots visibility is increased. In addition, sensors and devices used for surveillance and research missions, usually installed in the nose or in the bottom of the fuselage, are not disturbed by the propeller wake.

The aircraft structure is made of fiber carbon and a lot of experience has been achieved around its design. In fact, the Sky Arrow has been the first all carbon-fiber aircraft to be certified for general aviation in the world.

The ERA and RAWAS Systems

RAWAS (Remotely Assisted Working Aerial System) and RAWAS/ERA (Environmental Research Aircraft) are systems developed for territory control, environmental monitoring and scientific research purposes. The aerial platform for these system is the certified version of the Sky Arrow, provided with special devices and equipments. These systems can be grated worldwide, according to each Country's flight regulations.

Some fields in which these systems have been applied are:

- Low altitude territory aerial surveillance
- Illegal migration control and unauthorized activities
- Census of anthropical activities
- Traffic flow control
- Search for water and electrical energy leakages
- Beach and coastal areas monitoring
- Natural and environmental disaster monitoring and fire prevention
- Crops growth monitoring
- Aerial monitoring for pollution, ground surface contamination and environmental conditions
- Detection of electromagnetic, nuclear and other harmful radiation
- Detection of suspended particles and hazardous nocive gases
- Photogrammetry
- Map development
- Special event TV broadcasting

Product and Service description

The applications mentioned above can be classified as follows:

Sector A	<p>Description Real time Acquisition of data of events, with their transmission to a Remote Center and Control Station. Used in case of both surveillance data and monitoring missions carried on for security and prevention purposes.</p> <hr/> <p>Purposes To provide the Center and Control Station with direct Real Time HD & IR images of the event monitored, in order to perform early detection of natural or man caused crisis with a short response time.</p> <hr/> <p>Aircraft Configuration Aircraft is configured for territory and environment monitoring and equipped with electro-optical sensors on steer able gyro-stabilized platform.</p>
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Sector B/D	Description
	Purposes
	Aircraft Configuration
Sector C	Description
	Purposes
	Aircraft Configuration

Value proposition

The ERA/RAWAS System, based on the Sky Arrow aerial platform, meets the requirements of the Local Public Administration, law enforcement and private organizations to control both the territory and the environment.

It offers several advantages:

- it complements Earth Observation data for detailed on-time monitoring and on-line supporting of operational decision;
- it integrates the traditional helicopter (rotating wing) equipment and it can be used for data-collection missions, that faster airplanes (fixed wing) cannot perform;
- it allows operators to drastically cut operating and maintenance costs.

A fixed wing aircraft is the best choice for 200 Km (125 miles) range missions or when monitoring has to be performed by simply orbiting around the target. The most suitable aircraft for aerial monitoring must have STOL (Short Take-Off and Landing) characteristics in order to perform take-off and landing on short (e.g.: 300 m) grass type airstrips. In addition, it has to be able of circling at low altitude and speed (45 knots, 80 Km/h) and cruising at a sufficiently high speed (110 knots, 200 Km/h), in order to reduce the transfer time.

Sky Arrow presents all the aforementioned characteristics. These, together with its design specifications and flying qualities, place the Sky Arrow at the leading edge of aerial surveillance at medium-low altitude and speed.

Validation

The Sky Arrow, equipped with the ERA/RAWAS System, is currently being operated by the U.S. Government Institution of National Oceanic Atmospheric Administration (NOAA), research organizations and universities such as:

- San Diego University (California, USA);
- Alabama University (Alabama, USA);
- Lund University (Sweden);
- CNR-IBIMET (National Research Council - Institution for biometeorology, Florence, ITALY);
- CNR-ISAFOM (National Research Council - Institution for agricultural and forest systems in the Mediterranean area, Naples, ITALY);
- Tuscia University (Viterbo, ITALY);

Events Calendar.

MMC Club barbecue Noon, next Sunday (20th November)

RAANZ AGM Rangiora 19 20th November

Matamata 19 20th November

New Years Day Fly In 1 January 2012 Athols Strip Lunch.

Committee

First Monday of the month 7 pm.

Come along join in grab yourself a job next AGM.

Looking at getting spare prop for the Hanumann.

Probably looking at meeting somewhere for Christmas dinner drinks.