JX SATELLITES

From Auckland New Zealand to Bamyan Afghanistan

This article must be the most interesting of any I have written. It shows what can be achieved by individuals scattered around the globe who work in together to achieve a result. The end result of this story was achieved by the combined efforts of approximately a dozen individuals located in three different countries.

This story begins a little over a month ago when I received a message from Craig Sutton at Apsattv. We all know Craig; many of us look towards his web sites for information and some times inspiration. His sites are an invaluable resource for both the satellite enthusiast and industry professional.

Craig passed on a message which had been forwarded to him by Brendon Bell Sky TV's Christchurch technical representative. I actually had the privilege of meeting Brendon at the "Satmax" digital future seminar of which I was a guest speaker held in Christchurch some years ago.

Brendon had received an email from a member of the New Zealand forces stationed at KIWI BASE in BAMYAN in Afghanistan.

Below "Kiwi Base" Bamyan Afghanistan

Why Kiwi Base did in Afghanistan contact Sky NZ? Afghanistan is a little out of Sky's Optus footprint not much chance of any overspill there. The message revealed that up to six weeks ago the only form of parochial entertainment **"SPORT**" came from the C band global service of Multi Choice the South African broadcaster.

Up to six weeks ago Kiwi Base Bamyan had been receiving Super Sport 1 and 2 channels from Intel sat 10 which had used a global beam with coverage spreading up to Australia. This down link coverage would have provided coverage to well over 100 countries. This change in satellite coverage coincided with the departure of the South African military personnel from Bamyan. Although we have been advised since that Super Sport is still being received in Asia. Perhaps the South African personnel took their dish home with them. What ever the reason the end result was that there was no "TELLY"

For the Military personnel stationed at Kiwi Base Banyam this was the end of any type of sport entertainment “Telly” for the troops during their off duty hours. From the recent pictures the area around Kiwi base is pretty desolate. The word went out globally to try and find a replacement television service for the men and women based at Kiwi Base Banyam in the heart of Afghanistan.

Some how the “Plea “ got to Sky TV NZ and Brendon Bell who sent it to Craig Sutton at Apsattv who passed it on to my self and Peter Dobson at JX Satellite and Communications . It would seem up to that point that for six weeks “Kiwi Base “ had been emailing satellite service providers the world over and got no where.

That Thursday night we searched the data bases trying to think of a satellite service which would be receivable in Afghanistan which would carry the type of programming they desperately sought.

Obviously Intelsat 10 was out of the question; whether this was because the South Africans took their equipment including their dish home or the service could no be acquired is not relevant. There was no” TELLY”. We searched to see if anything from this end of the world such as Australia network had coverage over Afghanistan. We found that one Indian service provider had Australia Network if we could not find any better sports channel. The more we searched the more unlikely the chances were of finding a source of programming that would replace the loss of the South African coverage of Rugby.

Reading the email from Kiwi Base for the 65th time they mentioned “Sky Sport”, we believe this to be an error, we think the writer meant “Super Sport” but it jogged my memory into remembering that the British Armed Forces provided satellite services very similar to those provided world wide by the American Armed Forces stationed around the globe. But did they have coverage over Afghanistan?

Armed Forces Radio and Television Service “AFRTS” , pioneered overseas television and radio for US military personnel during the 1980’s with parochial programmes beamed directly from the US via Intelsat at 180 East on a global beam to the US military stationed in Japan , Korea and the Philippines and other Pacific US installations .

That service was avidly watched by the earliest of satellite dish owners both here and in Australia and became the goal of many experimenter and enthusiast until they encrypted using Power Vu in the early 90's. In some circles the topic at the smoko table was not what was on New Zealand s TV1 or TV2 channels the night before but who the guest was on the "Johnny Carson "Show.

The AFRTS Logo 1980's fondly remembered by those who had built or some how managed to receive these transmissions in the early 1980's from the AFRTS Global Beam on Intelsat 701 located at 180 degrees east.

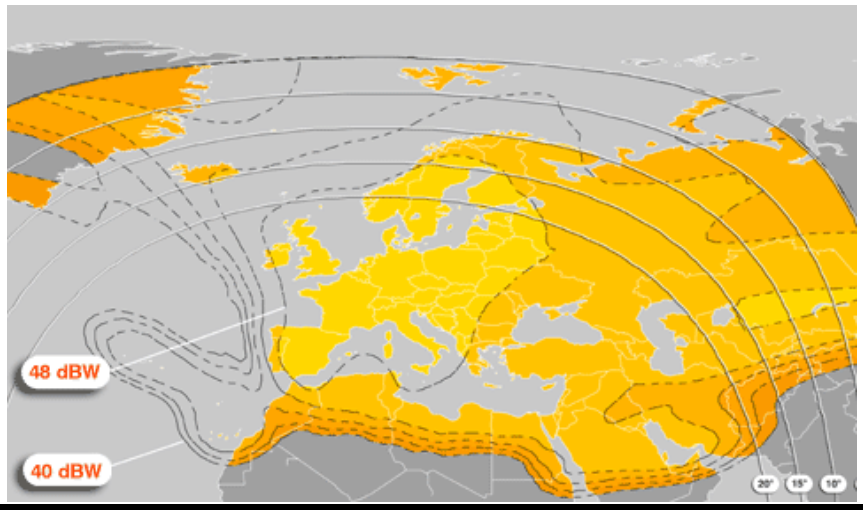
The British Forces Broadcasting Service "BFBS" operate a similar satellite service to that of the old" AFRTS" or as its now known "AFN" Armed Forces Network.

BFBS provides its satellite service to British Military personnel serving in countries over seas. It just happens that UK forces are deployed in Afghanistan and that BFBS along with their channel line up provide UK Sky TV Sport 1 and Sport 2.

The service in question occupies transponder No 6 /11324 Vertical with a symbol rate of 27,500 and FEC of 2/3 on Eutelsat W3A @ 7.00East. The approximate signal strength to "Kiwi" Base at Banyam is between 43 /45 Dbw.

However the issue that concerned us here in New Zealand was that the elevation angle to Eutelsat W3A @7 .00East to Banyam was 15.2 degrees. So what I hear you say, we work to Asia sat 3 and 5 here and Palapa D and they are less than 15 degrees. For those who have used an offset dish on Palapa D with an elevation of 13 degrees elevation 15 degrees you will note that the dish is actually pointing towards the ground due to the offset angle of the that dish type.

Eutelsat W3A at 7.0°E



For signals in the region of 43 to 45 Dbw, JX calculated that a 1.2m offset dish mated with a DMS universal LNBF would provide a minimum of a 10 dB carrier to noise up to 12 dB at best. Given the assumption that the transponder was operating at near full power and the STB threshold of approximately 4.5dB we felt we had a solution to go back to The NZ and other military based at Kiwi Base Banyam with.

Over the next 24 hours E mails were sent to the person at Kiwi Base Banyam who was coordinating this project and JX's point of contact. The answer came back "Lets Try"
JX Satellite then approached the British Forces Broadcasting Service in the UK. Again emails appeared nightly. The first was asking if there were British personnel stationed at the Camp. For security reasons I can not divulge names or who is stationed at Banyan.

Let it suffice to say that BFBS were convinced that they could extend their satellite service to the personnel stationed at Banyan. BFBS then arranged the delivery of two BFBS encrypted STB's to Kiwi Base Banyam which are probably on the way there from the BFBS coordination point in Afghanistan, since arrived.

	BFBS 1	A T	Crypto works	8001	101	401 E
	BFBS 2	A T	Crypto works	8002	102	402 E
	BFBS 3 Kids	A T	Crypto works	8003	103	403 E
	BFBS 4	A T	Crypto works	8004	104	404 E
	Sky Sports 1 UK	A T	Crypto works	8005	105	405 E
	Sky Sports 2 UK	A T	Crypto works	8006	106	406 E
	Q (UK)	A T	Crypto works	8007	107	407 E
	Sky News UK	A	Crypto works	8008	108	408 E
	BFBS 1 Day Later	A T	Crypto works	8009	109	409 E
	[test card]		Crypto works	8010	110	410
	BFBS Radio Middle East	A S	F	8021		421 E
	BFBS Radio Cyprus	A	F	8022		422 E
	BFBS Radio Germany	A	F	8023		423 E
	BFBS Radio 2 World	A	Cryptoworks	8024		424 E
	BFBS Radio Europe		F	8025		425 E
	BFBS Radio Balkans	A	F	8026		426 E
	BFBS Radio Afghanistan		F	8027		427 E
	BFBS Radio Gibraltar		F	8029		429 E
	BFBS Radio Northern Ireland	A S	F	8030		430 E
	BFBS Radio Navy		F	8031		431 E
	BFBS Gurkha Radio					

BFBS Television Logo above and the Satellite service channel line up on Eutelsat W3A located 7 .00 east

At the outset I had mentioned that JX Satellite had a 1.2m Pacific offset satellite dish sitting in the JX ware house here in Auckland. This was one that wasn't required by Sky TV's advertising agency who we obtained several for three or four months ago for a bill boards advertising Sky TV.

1.2m Pacific Satellite offset dish at JX ware house in Auckland

Another E mail came in the British don't have any spare dishes, can you send the one you have got. We had no problem with this and a quick decision was made to give the dish, two LNBF's donated by DMS International and a signal meter to our troops stationed at Kiwi Base Bamyan.

Let me set the record straight that Peter and I were not being do gooders by participating in this venture, many others participated and are mentioned also .I would like to thank those people with military connections who have taken the time and effort to thank Peter and myself for putting this very worthwhile venture together.

Now back to the story "Yeah sure" we can send it but how do we get it to Afghanistan it will take for ever and cost a fortune sending it by normal methods even if it gets there in one piece . I could imagine Peter and me licking millions of 50c stamps and trying to keep a straight face when we handed it back to NZ Post." talk about horror story "

So when in doubt consult the professionals. A call to the NZ Military in Wellington went thus.

"Good morning its JX satellite here from Auckland, I wonder if you can help us, we have a 1.2m satellite dish to go to Banyan in Afghanistan It's a little too big to put postage stamps on."

A very charming Lady on the other end of the phone replied **"OH let me see, you need Deployment, and here is the number best of luck"**

Anther call later to Wellington HQ of the joint forces NZ Major Dan I'll call him pulled out all the stops. He informed me that if I got the box to RNZAF Whenuapai he'd get it to Banyam .Within three hours we had an answer back that they wanted to know the dimensions which we sent by return. An hour later we received a reply from RNZAF Whenuapai which read.

Hi Tony,"
I can assist you in getting the dish to its destination "
"I see from the email traffic the dish is 1.2m in diameter. That will fit easily inside the C-130 aircraft."
"You will need to get the dish too us no later than Tuesday so we can complete all the paper work."

So on the Monday morning JX staff got ready our consignment for Kiwi Base Banyam ready for its trip to RNZAF Whenuapai next morning. In the box with the 1.2m Pacific Satellite antenna we placed two universal DMS LNBF's donated by DMS International and a Squawker signal meter.

All these arrangements came together while the personnel and our point of contact at Kiwi Camp Banyan were sleeping. So by the time they woke all the arrangements were made.

We advised them of the following "JX Satellite" is sending you a 1.2m dish via military aircraft it will be delivered to RNZAF Whenuapai on the 6th of July ready to be loaded onto a Hercules C130 transport aircraft for its trip from Auckland to Afghanistan.


RNZAF BASE AUCKLAND
WHENUAPAI

Pictures:
1: Peter and Tony loading the dish onto a trailer for the trip to Whenuapai.
2: Peter and Tony outside the main gates of RNZAF Whenuapai.
3: Inside the deployment area Left to right Aaron, Tony and Peter

Hi Tony,

Thanks very much and also for your swift reply. I came into work to check my emails and it appears as if everything has been sorted by you.
I'll be sure to get some action photos of the setup and final installation. I'll also ask that in the winter months our replacements send through some updated photos.
Again thank you for your advice and support over the last couple of weeks.



1: RNZAF C130 over flying Kiwi Base Banyam
2: Landing at Kiwi Base Banyam
3: New arrivals to Kiwi Base Banyam

Pictures: From NZ Defense Force.

JX Satellite & communications received an email from the Commanding Officer Kiwi Base Banyam Afghanistan

Tony,

You & your team are bloody champions. All at KIWI BASE in BAMYAN thank you.

The name or Rank can not be divulged due for security reasons.

JX Satellite is honored to be able to support our troops serving in Afghanistan. However none of this would have been possible with out the help and assistance from the following people.

Peter Dobson: Director JX Satellite & Communications NZ
Brendon Bell: Sky TV NZ Christchurch
Craig Sutton: Apsattv NZ
Tim Heinrichs: DMS International US
British Forces Broadcasting Service UK
NZ Military Joint forces HQ Wellington
Royal New Zealand Air Force.

Tony Dunnett
Technical Director
JX Satellite and Communications

However our story does not end here, Thursday the 22nd we received an email informing us that the dish was on the plane that arrived at Banyam but was not off loaded and ended up atThe New Zealand National Support Element (NSE) is based at Bagram Air Force Base (BAF) about an hour and a half (60km) drive north of Kabul. Their task is to provide logistical support to the NZ PRT at Kiwi Base in Bamyan and other NZDF personnel in Afghanistan. This meant a further delay in receiving the dish and other equipment.

Any way they got the dish and proceeded to build it, they soon realised that the mounting pole that came with it was not long enough so they made another one and proceeded to find the satellite. There biggest challenge came when it was found that the dish could not see the satellite due to the lower rim of the dish hitting the pole it was mounted on.

JX dish on pole

1.2m British install

1.8m channel Master

So an interim solution was sought so that they could see the “Australia vs. South Africa “rugby game due to be played Saturday New Zealand time. Various ideas were exchanged and more tests run here in Auckland using a variety of offset dishes bore sited on Asia Sat 4 @122 East which provided us with a 20 Degree elevation angle .

So an interim solution was sought so that they could see the “Australia vs. South Africa “rugby game due to be played Saturday New Zealand time. Various ideas were exchanged and more tests run here in Auckland using a variety of offset dishes bore sited on Asia Sat 4 @122 East which provided us with a 20 Degree elevation angle .

Finally it was decided to place the dish on a frame with a pole attached and to elevate the back of the mount forcing the dish from down. As the picture shows the back frame elevated. This is very well illustrated by the pictures below. Note the Squawker still connected and the LNBF skew to approximately 4pm / 51 degrees.

The last Email received on Sunday morning stated with two hours to go we went for broke and finally acquired a good enough signal to lock the decoder . We finally got pictures and enjoyed the game.

We also found another dish prime focus lying around and put the spare LNBF on it and within minutes we also had that working as well. Both dishes will be used in different locations and we’ll use both decoders as well.

Thanks again to everyone that made this possible and the help and assistance over the last four weeks.

The last Email received on Sunday morning stated with two hours to go we went for broke and finally acquired a good enough signal to lock the decoder . We finally got pictures and enjoyed the game.

We also found another dish which was not an offset type lying around and put the spare LNBF on it and with in minutes we also had that working as well. Both dishes will be used in different locations as we have two decoders authorized and supplied to us by the BFBS. They also supplied a splitter and 100m of cable.

However with two dishes operational we have a lot more flexibility to where we set up the viewing areas.

View in front of the dish (TOP) **JX satellite 1.2m dish on its first mount**

Like many of us have found out nothing goes according to plan. The elevation adjustment just missed the magic mark. Even elevating the back end proved not to work successfully. When the dish was spun around the elevation changed and given the squawker meter being the only satellite test equipment to hand it was just to difficult to get a steady signal to actually open up the STB.

In the end they decided to fabricate a mount that would allow the dish to sit in free space. They had all the adjustment they required when turning the dish to locate the satellite.

Thanks again to everyone that made this possible and the help and assistance over the last four weeks. JX satellite and Communications was pleased to be able to assist Kiwi Base regain their ”Telly”. We should amend our web site and make our service area Metropolitan Auckland , New Zealand and .Bayman Afghanistan