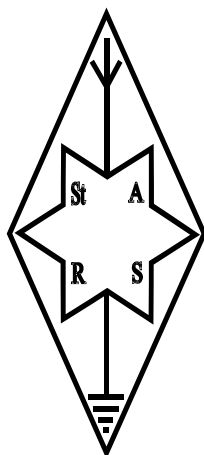


# STARLITE

**G6OI**  
1938

*The Award Winning Newsletter for Members and Friends of*  
**Stourbridge and District**  
**Amateur Radio Society**  
incorporating  
**Old Swinford Hospital School Radio Club**

**G6SRS**  
1938



**G4CVK**

1969

**ISSUE**  
**07/2015**



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# **STARLITE**

## **MEETINGS**

Visitors always welcome  
The Society holds its full meetings on the  
1st and 3<sup>rd</sup> Monday of each month at

**Old Swinford Hospital School  
Heath Lane  
Stourbridge  
(8.00pm – 10.00pm)**

Additionally the shack is open during the same times on the  
intermediate Mondays

Telephone Enquiries to :-  
Hon Secretary  
John Clarke M1EJG  
(01562) 700513

Or by e-mail to :-  
honsec@g6oi.org.uk

All correspondence/enquiries should be  
addressed to the Hon. Secretary :-  
STARS  
c/o The Mill House  
21 Mill Lane  
Blakedown  
Kidderminster  
DY10 3ND

STARS Web Site URL :-  
[www.g6oi.org.uk](http://www.g6oi.org.uk)

# STARLITE

## EDITORIAL

Thanks to James for noticing that the StARS logo had gone missing from the top of the magazine. I had to go back to the August 2013 issue of Starlite to retrieve the missing item

Adrian (G0NLA) Starlite Editor

## MESSAGE FROM THE PRESIDENT

*From recent Committee meeting:-*

Official society rules have been updated and are available at <http://www.g6oi.org.uk/constitution.htm>

Eric's G3IVQ family have kindly donated £150 to the club, Committee agreed to look at purchasing an aerial analyser up to the cost of £200 in his memory.

Comments received (from an ex member) regarding £2 cost for non members to attend main meetings.

We have been asked by Duke of Edinburgh scheme to run a foundation course starting in September, dates to be agreed. If anyone knows of other potential candidates then contact Hon Sec. Work still ongoing with shack, aim to have an on air night on first meeting of month. Arrangement to feed coax into shack cupboard away from feet etc. required.

The committee needs ideas and suggestions from members regarding suitable construction projects.

*BBQ Evening.* (See next page for photograph) A very pleasant sunny evening was had by all those who attended the sheep walks. Many thanks must go to Dr Alan for kindly funding the food. Also a mention to Hon Tres who had the task of cleaning the BBQ after use. Many of you also brought additional food and drinks for all to share. Finally a mention to Stuart for his brave action in eating the last 2 sausages – well done.

***It is proposed to take part in this year's SSB Field Day event. These events don't just "happen"; events like this need to be planned and people need to commit to helping out. In an ideal world 3 people are required at any one time. 1 to operate, 1 to log and 1 for any other duties, i.e. check generator.***

**Please let Keith know if you are able to assist during the weekend of 5<sup>th</sup> & 6<sup>th</sup> September. Further details at <http://www.rsgbcc.org/hf/rules/2015/rssbfd.shtml>**

*In line with David Cameron this will be my last term of office as president. Time to start thinking about who will take over President of the Society come March next year. Of course the final decision is in the hands of the members of the society at the AGM.*

*Finally Mark's new callsign – going from Foundation to Full Licence is M0TCG – listen out for him on the air.*

The new rule 8 is shown below on the next page :-

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## 8. SUBSCRIPTIONS

Subscriptions for membership shall be as follows

a) ADULT MEMBERSHIP (18 yrs. and over) £20.00. Per annum.

b) JUNIOR MEMBERSHIP (12 - 18yrs.) Half rate

c) FAMILY MEMBERSHIP (same address) One ADULT membership fee plus half rate for each additional member

d) MEMBERS AGED 60 YRS. AND OVER, UNEMPLOYED AND FULL TIME STUDENTS  $\frac{3}{4}$  ADULT membership fee

e) Each new member will be required to pay the cost price of any additional administration fee associated with joining the society..

f) All subscriptions shall fall due on the date of the ANNUAL GENERAL MEETING.

g) Persons joining the Society after the ANNUAL GENERAL MEETING shall be liable to pay subscriptions on a pro-rata basis for the months remaining. For the purpose of these rules, family membership will count as ONE member. Membership rules are published on the official website of the society. A Printed Copy may be requested as required.



*Illustration 1: Thanks to Wayne for his photograph*

# STARLITE

## **This Month club member Keith Dixon shares with us how he became involved in Amateur Radio**

### **When and how did you first gain an interest in Amateur Radio?**

Through CB radio back in the mists of time. Illegal was just becoming legal, fun, and was something to enjoy on the way to and from work. Traffic reports and best routes became both informative but also a source for humour and mischievous misinformation. "Halesowen by-pass running clean and green"... I wish !!.

Then along came amps and channel wreckers and CB wasn't fun anymore.

### **What was taking your course and exam like?**

My way to the exam was via a City and Guilds course at Foley College which led to exemption from a B licence.

I really enjoyed the course, passing the C&G exam without problem, but by now I was getting involved in nautical activities and wanted the A licence...

Only morse, any fool can do that.... I think it was about 10 words a minute I found there was one fool who couldn't do that....If I can't get an A licence, I wouldn't bother with the B licence.

As the years rolled by I obtained a licence for operation on VHF marine band and it was my Yachtmasters (Power and Sail) and later a Commercial Skipper's ticket which brought me back to morse again, this time no problem but still I didn't apply for an A licence.

More and more years passed and then I met and became friends with Nick G6DQN who suggested I might like Amateur Radio.

Of course the rules had now been changed and my C&G would now exempt me from all exams and give me a full licence. Just one small problem, to claim exemption I needed my C&G Certificate which I had managed to lose.

C&G were very good, tell them where and when and they could re-issue my certificate. I knew where, but when???? Nick to the rescue and although the college had destroyed their records after 7 years (years ago) he found my original lecturer who guessed within 3-5 years when I had gone to Foley College and bingo... C&G found my records and replaced my certificate.

Ofcom then were happy to issue M0HPY... of course I'm HapPY.

### **What has been your most interesting work job?**

I was just 21, just married and just finished my training under Sir Herbert Manzoni (City of Birmingham) and was offered the job of Resident Engineer at Birmingham Airport. I was flying high.

Now a confession, if you ever fly from Birmingham Airport cast your eyes from the viewing area over the apron and you will see in the distance ... Elmdon Airport... my airport.

The camber (shape) of the runway was designed so that the propeller of a Sopwith Camel wouldn't hit the tarmac!! and if a Pickford's removal lorry was passing up the A45 a landing plane could hit it.

Those were great days, introducing me to the wonders of Airports, instrument landing systems and onto major expansions at East Midlands Airport, but that's another story

### **Most frustrating electronic piece of equipment that you have owned or had to operate?**

# STARLITE

Being involved in the design, installation and operation of a countywide radio system when working for West Midlands County Council.

**What other hobbies are you/have you been involved in?**

Water sports, dinghy racing, yacht cruising/racing/training, diving, flying, RYA training. RNLI

**What has been your most memorable car you have ever had?**

In the past an MGB GT for sheer fun and enjoyment by the wife and children  
At present an SLK 32 AMG for brute force and exhilaration

**Which member of Stars has been most influential in your amateur radio life?**

It has to be Nick G6DQN who originally relit my interest in radio then helped me so much re qualification, not forgetting Sean M3XMJ who as part of Team Festival gives me respite from the real world.

# STARLITE

## TELEVISION SIGNALS USED TO TRACK AIRCRAFT & MORE

### Radar - A recap

As radio amateurs we know all too well that radio signals get reflected. Sometimes the reflected signal is wanted in the case of radar (Radio Detection and Ranging) and at other times it is a nuisance, such as when we get flutter on mobile 2 meter FM voice signals. The principle of Radar was pioneered back in 1935 by Sir Robert Watson-Watt when a radio signal was bounced off a bomber using a BBC transmitter. Conventional broadcast radio and TV aerials transmit and receive using a static aerial. Radar often uses a rotating aerial to produce a 360 degree display.

Commercial aviation radar transmitters are often high power devices as I found out when I parked my car at Heathrow and I discovered that I could not receive 2 meter FM signals as I waited for an incoming flight. I never found out if my receiver was being swamped by a nearby radar transmitter or the electronics in the radio were being affected. Radar transmits a high power pulsed radio signal some of which will be reflected back to a receiving aerial which is often sited near to the transmitter. If the object illuminated by the radar is moving, the reflected signal will undergo a change in frequency, also the radio signal round trip time indicates the range of the aircraft that has been detected. As only a very small proportion of the transmitted signal from the ground-station is reflected from passing aircraft this requires high power ground-stations which are expensive to set up and run. The volume of aircraft traffic is ever increasing and this has led to interest in alternative methods of aircraft detection.

### Alternative methods of detection

During the last two years UK National Air Traffic Control Services (NATS) in partnership with Roke Manor Research Limited have been experimenting with using broadcast television signals from existing TV transmitters at Crystal Palace and more recently Liverpool. Early indications are that up to thirty aircraft can be detected at altitudes of up to 10,000 ft. As with radar the principle of comparing the delay between transmitted and reflected signals is utilised although with multiple ground based aerials. As of June 2015 according to Avionics Today the idea is feasible, but the detail needs to be worked through. For example air traffic control will have a greater interest in the resilience of signals than a TV broadcaster who may be willing to take transmitters off air for maintenance and change. There are indications that detection of aircraft utilising TV signals has advantages over conventional radar where wind turbines can create false positives. Utilising TV signals has the potential to reduce the cost of transmitting and maintaining high power radar signals.

### Conclusions

There is already a range of methods for tracking aircraft and tracking aircraft by utilising TV signals should be seen as a complementary technology rather than a replacement for existing methods. Another advantage of the above technique is that it does not require the cooperation of the aircraft involved which is advantageous if an aircraft does not have radio identification equipment or the equipment is switched off.

### Further Reading

The Economist explains how television signals can be used to track aircraft.

Roke – MSPRS – Multistatic Primary Surveillance Radar

BBC – TV signals used to track aircraft.

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## Footnote

The item below is off-topic, but may be of interest. Some of you may have installed the application or app Flight Radar 24 on your computer, tablet or mobile phone. See screen print below. The application relies on each aircraft broadcasting its position and other flight information such as altitude, speed, call-sign, origin and destination and more, and uses a system known as ADS-B (Automatic Dependant Surveillance Broadcast). Currently not all aircraft are fitted with ADS-B transmitters, Air Force 1 being an obvious example.

ADS-B radio transmissions can be received with relative ease using a home-brew collinear and software defined radio dongle. The results are then fed to pc which adds the received signals to map similar to the illustration below. For those of you who missed it Wayne gave a demonstration of receiving ADS-B on his software defined radio talk. The transmission frequency of 1090Mhz or 978Mhz is easily received by and decoded by a £10 SDR dongle. A home-brew collinear with a clear view of the surrounding horizon can provide a suitable signal.

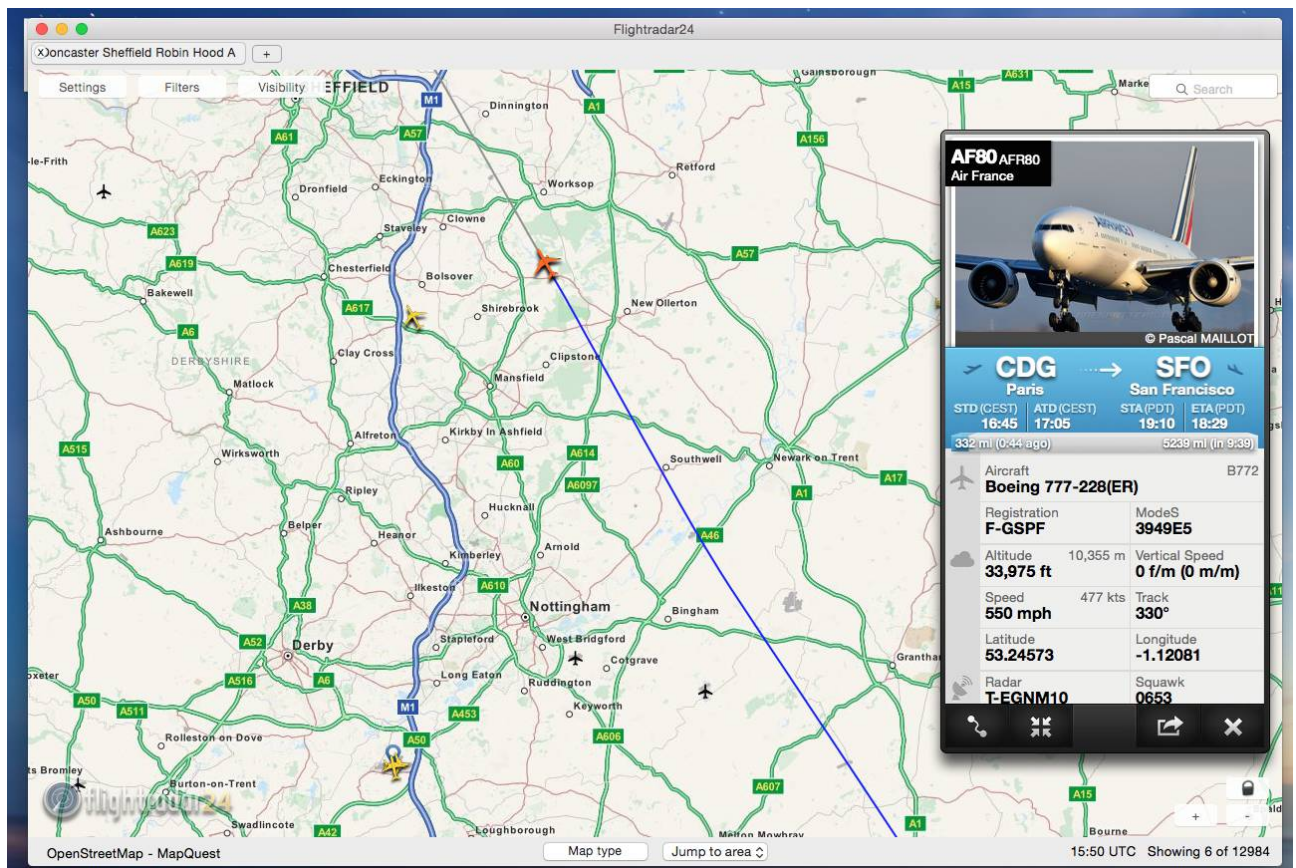


Illustration 2: Live tracking of aircraft using Flight Radio 24

As usual any errors are mine.

(Adrian - G0NLA)



# STARLITE

## YOUR COMMITTEE

Hon. President	JAMES	G7HEZ	
Vice President	NICK	G6DQN	
Hon. Secretary	JOHN	M1EJG	(01562) 700513
Hon. Treasurer	JOHN	G8UAE	
Committee Members	MARK	G7EDZ	
	KEITH	M0HPY	
	SEAN	M3XMJ	
	TIM	G7TAC	
	MALCOLM	G8BOP	
	WAYNE	M5LLT	
Starlite Editor	ADRIAN	G0NLA	

## CALENDAR OF EVENTS

**It should be noted that the Shack will be open every Monday evening unless shown otherwise in the Calendar**

July	Mon 6th	Foundation Exam Re-sit
	Mon 20th	Tim 4x4 Response
August	Mon 17th	No Main Meeting
	Mon 31st	Bank Holiday - No Meeting
September	6 <sup>th</sup> & 7 <sup>th</sup> Sat Sun	SSB Field Day
	Mon 14th	Roger G4ROJ . Kite Aerials
October	Mon 19th	Dave G4DPZ Amateur Satellites
November	Mon 16th	Annual Surplus Sale
December	Mon 7th	December Christmas Gathering
2016		
January	Mon 18 <sup>th</sup>	TBC
February	Mon 15th	Constructors Competition and Quiz by Peter
March	Mon 21st	AGM
April	Mon 18th	Digital Radio and Repeaters = Phil (G4SPZ)

**Please note in future :-**

**There will be £2 admission charge to non-members for attending main meeting talks / events. This is refundable against joining the society.**