

28 July 2011

Ms. Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554-0004

Reference: IB Docket No. 11-109

NBAA's Comments: LightSquared
Technical Working Group Report

Via ECFS: <http://fjallfoss.fcc.gov/ecfs2/>

Dear Ms. Dortch:

On behalf of the over 8,400 members of the National Business Aviation Association (NBAA), that operate over 11,000 aircraft – airplanes and helicopters, reciprocating and turbine powered – in support of commerce in the US and throughout the world, we wish to comment on the reference Docket No. 11-109. The owners/operators of these aircraft, known as business or corporate operators are used for business purposes and are part of the General Aviation community in the US.

NBAA is concerned that the waiver granted earlier this year by the Commission (FCC) to LightSquared, regardless of its good intentions and the caveats it employed, was a rush to judgment. We wish to join those expressing concerns and dismay over the interferences the proposed LightSquared system will impart on the Global Positioning System (GPS) L Band frequencies.

General aviation operators have been early adopters of GPS technologies. Prior to GPS availability aircraft operators were limited to navigation, either by map reference – when the visibility was good enough – or point-to-point electronic navigation using World War II era ground-based navigation aids. These en route NAVigation AIDs (NAVAID) such as Non-Directional Radio Beacons (NDBs), Very High Frequency Omni-Directional Radio Ranges (VORs), Tactical Air Navigation (TACAN) and Distance Measuring Equipment (DMEs), Instrument Landing Systems (ILS) and others resulted in circuitous, inefficient and costly air navigation

routings. These early rudimentary systems, not too far removed from visual beacons used in the 1920's and 30's, have provided a high level of dependable but inefficient flight, with greater fuel burn and more time en route because of all aircraft on a specific route having to pass over the same geological points in space above a NAVAID's location. Of course all of this is with the attendant, and now largely unnecessary, additional fuel consumption.

When the GPS became available for civil use in the 1980s it was almost immediately recognized by the general aviation community as providing higher levels of safety, precision and efficiency. Over time, the sophistication of on-board equipment has evolved and provided even more accurate positioning. When provided with a Space Based Augmentation System (SBAS, known in the US as WAAS) this equipment can easily maintain a point in space within 500 feet anywhere on the globe. The technology allows instrument approaches that are not only user friendly, but nearly universal, which in turn has improved safety. Today, more than 60% of the business aircraft operating in the US are equipped with various GPS capabilities required for highly precise instrument approaches and even more have en route capabilities. Over 85% of aircraft being delivered today are so equipped.

There are nearly 5,000 airports (not counting helipads) in the US with 9,748 approved approaches reliant on GPS currently available to in the US. GPS is now one of several international satellite-based navigation systems, either operating or in the process of implementation. They are collectively and generically known as Global Navigation Satellite Systems or GNSS. Together these systems complying with standards set under the Chicago Convention by the International Civil Aviation Organization (ICAO) to provide transparent guidance nearly around the world.

Beyond en route navigation, GPS guidance provides for approaches by aircraft down to runways and helipads for landing – some landing facilities have more than a single approach depending on runway layout and to accommodate variable wind conditions. Similar guidance is provided to allow the aircraft to safely depart the landing environment and back into the en route structure of the airspace.

For more than three decades, the GPS, as administered by the U.S. Department of Defense (DOD), has been integral part of our nation's infrastructure. NBAA has worked with state and federal agencies, including the DOD, Homeland Security (DHS), and Transportation (DOT), first responders, agricultural users, engineering, time transfer organizations as well as members of the general public concerned with the potential impact on their auto and personal navigation and communication devices that will be effected should interference with GPS spectrum be allowed.

NBAA has closely monitored the work of the FCC-mandated technical working group co-chaired by LightSquared and the United States Global Positioning System (GPS) Industry Council (USGIC), that did a technical "due-diligence" review of the proposed LightSquared 4G LTE system. We have additionally participated in the independent technical evaluations made by RTCA (nee Radio Technical Commission for Aeronautics) – the primary federal advisory committee for aviation communications and navigation. Virtually all results have indicated that interference will decimate the signals-in-space of the GPS and make virtually useless millions of GPS receivers.

Previously we were involved during the development of the FCC original ancillary terrestrial component concept. It was never envisioned at that time to have anything near the power output or functionality found in the current LightSquared proposal. It never would have been supported by the industry if that had been the case. Even with the constraints ultimately placed on such an ancillary system there was by no means unanimity in its support, by the industry. It was felt that the spectrum under US and ITU regulation was not wholly appropriate for the ancillary system being proposed. Now the LightSquared application has proven the naysayers to have been prophetic.

There is now no question that without the complete integrity of the GPS signal, the FAA's multi-billion dollar planned deployment of the Automatic Dependent Surveillance-Broadcast (ADS-B) system (which serves as the foundation for the satellite-based Next Generation Air Transportation System [NextGen]) will not be possible. These concerns are obviously of vital importance to the safety, security and economic viability of our national air transportation system and the FCC must participate in totally mitigating all attendant issues before any LightSquared or similarly proposed system can be allowed to go live in any spectral proximity to the GPS portion of the L Band.

As previously noted, the general aviation community has historically been a leader in adopting new navigation and communication technologies. It is obvious that the introduction of such technological enhancements has the potential to provide needed and welcome additional benefits to the public. Our members are not opposed to the development and deployment of new or improved technology systems like LightSquared has proposed—as long as it is conclusively and unequivocally proven that it WILL NOT result in RFI (Radio Frequency Interference) with GPS systems or components or pose any threat to the global aviation transportation system.

Sincerely,

A handwritten signature in black ink that reads "Steven J. Brown". The signature is written in a cursive style with a large, prominent "S" at the beginning.

Steve Brown
Senior Vice President, Operations & Administration