



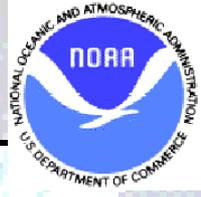
Beacon Manufacturer's Workshop

21 May 2010

A Methodology Change for US Beacon
Population Estimations and Forecasts



US Estimated Beacon Population



- The estimated total US beacon population (EstTotPop) is computed as:

$$\text{EstTotPop} = \text{NumReg} / \text{RegRate} + \text{SpecProg}$$

NumReg = # of US Beacons Registered in **NOAA RGDB**

RegRate = Ratio of Active US Beacons that are Registered in **NOAA RGDB**

SpecProg = Number of special program US beacons



US Estimated Beacon Population



- Example:
- NumReg = 20,000
- # Active, Registered Beacons = 800
- Total # of Active Beacons = 1000
- SpecProg = 100
- RegRate = $800 / 1000 = 0.80$
- EstTotPop = $(20,000 / 0.80) + 100 = 25,100$



US Estimated Beacon Population



- Estimated Total Population is computed separately by beacon type (EPIRB, ELT, PLB)
- Estimated Total Population is distorted if counts for different beacon types are combined, due to differences in the Registration Rate by beacon type





US Estimated Beacon Population



US Government Special Program (SpecProg) beacons

- Associated with National Use beacons that are allocated by NOAA (see separate presentation on Beacon Coding Issues)
 - Great majority are PLBs
 - Usually registered in a separate database (e.g., JSETs)
 - Usually not registered in the NOAA RGDB
- Because the Registration Rate in the NOAA RGDB is very low for Special Program beacons, these beacons are excluded from the computation of Registration Rate
- Count of Special Program beacons is provided by external (non-NOAA) US Government agency



Estimated US EPIRB Population 2006 to 2009



	2006	2007	2008	2009
# Reg Bcns	133,029	143,778	152,354	162,139
Reg Rate	0.772	0.766	0.794	0.807
Est_Pop1	172,215	187,710	191,873	200,832
SpecProg	0	0	0	0
EstTotPop	172,215	187,710	191,873	200,832

- Registration Rate increased from 77.2% to 80.7%
- No Special Program beacons



Estimated US ELT Population 2006 to 2009



	2006	2007	2008	2009
# Reg Bcns	13,137	18,926	29,344	41,258
Reg Rate	0.527	0.547	0.553	0.612
Est_Pop1	24,945	34,596	53,082	67,406
SpecProg	554	466	4095	4097
EstTotPop	25,499	35,062	57,177	71,503

- Registration Rate increased from 52.7% to 61.2%
- Small population of Special Program beacons



Estimated US PLB Population 2006 to 2009



	2006	2007	2008	2009	2009 Adj
# Reg Bcns	18,476	31,420	42,371	57,379	57,379
RegRate	0.667	0.59	0.372	0.376	0.801
Est_Pop1	27,714	53,277	113,838	152,652	71,651
SpecProg	19,064	27,404	46,655	111,081	111,081
EstTotPop	46,778	80,631	160,493	263,733	182,732

- Registration Rate decreased from 66.7% in 2006 to 37.2% in 2008
- Low RegRate due to:
 - many Special Program PLBs (usually not in NOAA RGDB) being included in computation of the Registration Rate and
 - sharp increase in the number of Special Program PLBs
- Methodology change for 2009
 - Increased RegRate from 37.6% to 80.1%
 - Decreased Estimated Total PLB Population by 81,000



US PLB Registration Rate



➤ Methodology change for 2009

- Previously, beacons were excluded from computation of RegRate only when USMCC performed special processing for the beacon
- Now all National Location Protocol PLBs are excluded computation of RegRate, even if USMCC special processing is not performed
 - All beacons are still excluded if USMCC special processing is performed (National Location Protocol and other beacons)

➤ With new RegRate, number of Special Program PLBs (111K) exceeds number of other US PLBs (72K)



US Registration Rate by beacon type Summary for 2009



ELT	0.612
EPIRB	0.807
PLB	0.801
Total	0.696

- Low Registration Rate for ELTs
 - Causes and corrective actions to be determined



US Estimated Total Population for 2009 and Forecast for 2015 - 2020



Beacon Type	2009	2015	2020
ELT	71,503	232,000	373,000
EPIRB	200,832	285,000	330,000
PLB	182,732	449,000	630,000
SSAS	286	450	700

- Change in methodology for RegRate resulted in a decrease in PLB population forecast for 2020 by 159,000
- Recent surge in the number of Special Program PLBs owned by US military – future trends are difficult to predict



US Beacon Population



➤ Questions?

