GT-400 Glide Target Update
& Live Fire Experience

30 October 2007
GT-400 Low Cost Aerial Target

ASTER-15 from the Carrier Charles De Gaulle Mediterranean Sea December 2006
GT-400 Development Goals

- Provide > 300 Kts Speed
- Provide > 30 nmi Safety Range
- Operable by tow target service providers (business jet) on a dial-a-sortie basis
- Low cost, expendable
- Long on-time presentation by operating initialy as an ordinary tow targets
- Low rcs (Allows replication of low RCS threats)
- Reduce Total Mission Cost
GT-400 Data

WEIGHT: 180 lbs  
LENGTH: 103 in  
DIAMETER: 7.5 in  
MAX SPEED: Mach .8 or 450 KCAS  
STALL SPEED: 160 KCAS  

RCS: < 0.1 Sq Meters (head on un-augmented)  

AUGMENTATION AVAILABLE:  
RCS – Active and Passive  
Infrared – FIRE-40 (nose or tail)  
Smoke, Flare and Chaff  

SCORING: CMDI-118 MICRODOPS
GT-400 Operational Scenario

FLY TO RANGE – TARGET CARRIED ON STANDARD REELING MACHINE

REEL OUT TARGET 30 - 1000 METERS

AT PLANNED LOCATION, ALTITUDE, AIRSPEED AND HEADING . . . RELEASE GT-400 FROM TOWLINE

TARGET GLIDES PRE-PROGRAMMED COURSE USING ONBOARD AUTOPILOT AND GPS NAVIGATION

MONITORED BY OPERATOR IN LAUNCH AIRCRAFT AND/OR REMOTE SAFETY OFFICER; BOTH HAVE CUT DOWN ABILITY
GT-400 Operation

1. Ferry to Range
2. Reel out GT-400 several thousand feet conduct acquisition & training runs
3. Release from towline
4. Accelerate to mission speed GPS guided, maneuver as planned
5. Terminate on Command (if required)

Up to 50 NM

SHOOTER AIRCRAFT

SHOOTER SHIP

NAVIGATION COMMANDS

PREPLANNED MISSION PROFILE

GPS DATA

LAUNCH AIRCRAFT

meggitt Defense Systems
GT-400 Typical Operational Scenario

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>FERRY TO RANGE</td>
<td>30 minutes</td>
</tr>
<tr>
<td>PRACTICE ENGAGEMENT</td>
<td>50 minutes</td>
</tr>
<tr>
<td>GT-400 ENGAGEMENT</td>
<td>10 minutes</td>
</tr>
<tr>
<td>FERRY HOME</td>
<td>30 minutes</td>
</tr>
<tr>
<td>TOTAL FLIGHT TIME</td>
<td>2 hours</td>
</tr>
</tbody>
</table>
GT-400 Maximum Duration/Range Profile

Course: 1G Race Track

Speed Setting 1: 250 KCAS
Flight Duration = 10.0 Min.

Speed Setting 2: 300 KCAS
Flight Duration = 8.3 Min.

Speed Setting 3: 350 KCAS
Flight Duration = 6.9 Min.

Speed Setting 4: 400 KCAS
Flight Duration = 6.0 Min.
GT-400 Target Operations

Military Jets

AGTS-36 Tow System

Contractor

. . . Dial-a-Sortie

“Mark, I’d like a target tomorrow at 0900. I’ll e-mail the pattern and coordinates.”
GT-400 Advantages

- Low Cost
- Convenient: Supports contractor operated ‘dial-a-sortie’
- Deliverable to remote ranges
- Long time on station to conduct practice runs (2 hours)
- Visual range Sweep by delivering aircraft
- Mission can be aborted prior to launch (e.g., fishing boats on range) without loss of assets
- Safety; finite footprint limited by laws of physics
- Environmentally friendly: No fuel, No pyrotechnics
- No post flight recovery assets or effort required
- Radar and IR signatures can be tailored from near zero to as desired
### GT-400 Live Fire Experience

#### Air to Air

<table>
<thead>
<tr>
<th>Date</th>
<th>User</th>
<th>Shooter</th>
<th>Missile</th>
<th>Range</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2005</td>
<td>USAF</td>
<td>F-16 (2 ea) F-15 (2 ea)</td>
<td>AIM-120</td>
<td>Tyndall AFB Gulf Range</td>
<td>6 missiles fired. All reported as Direct Hits</td>
</tr>
<tr>
<td>February 2007</td>
<td>Royal Australian Air Force</td>
<td>F-18 (4 ea)</td>
<td>AMRAAM</td>
<td>Restricted Area 453</td>
<td>Fwd aspect acquisition from 30-40 nm, 1 missile fired from 20 nm, Direct Kill</td>
</tr>
</tbody>
</table>

#### Surface to Air

<table>
<thead>
<tr>
<th>Date</th>
<th>User</th>
<th>Shooter</th>
<th>Missile</th>
<th>Range</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2006</td>
<td>French Navy Frigate</td>
<td></td>
<td>SM1-MR</td>
<td>Mediterranean Sea</td>
<td>2 hours of practice engagements followed by release and 1 missile fired Direct Kill</td>
</tr>
<tr>
<td>December 2006</td>
<td>French Navy Nuclear Powered Carrier</td>
<td></td>
<td>ASTER-15</td>
<td>Mediterranean Sea</td>
<td>1 missile fired Direct Kill</td>
</tr>
</tbody>
</table>
GT-400 IR Augmentation FIRE-40

FIRE-40 output W/Str (3.0-5.0 micron band) versus time after turn on
Input Power = 24 VDC, 14.5 A = 350 watts (Note 1)

One Hour Continuous On Duration in GT-400

May be turned On/Off As Desired

Note 1. Data measured by US Navy Laboratory at China Lake
GT-400 IR Augmentation
FIRE-40 Installation

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (inch)</td>
<td>100</td>
</tr>
<tr>
<td>Diameter (inch)</td>
<td>7.5</td>
</tr>
<tr>
<td>Wing Span (inch)</td>
<td>28.5</td>
</tr>
<tr>
<td>Weight (lb)</td>
<td>180</td>
</tr>
</tbody>
</table>
Meggitt Defense Systems
Meggitt Defense Systems