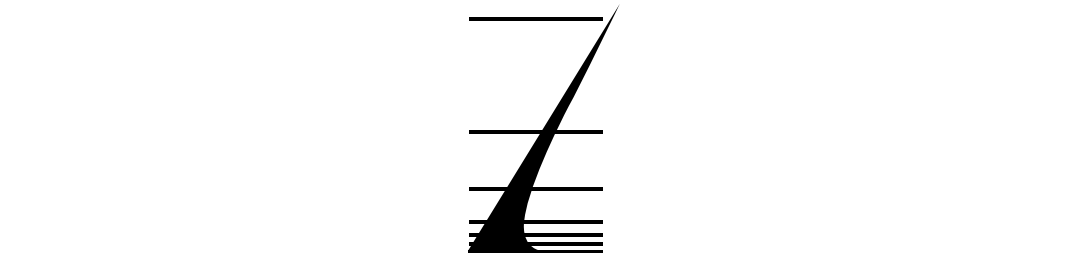
The Market for Aerial Targets

Product Code #F661

A Special Focused Market Segment Analysis by:



Analysis 2
The Market for Aerial Targets
2011 - 2020

Table of Contents

* * *

PROGRAMS

The following reports are included in this section: (**Note:** a single report may cover several programs.)

AQM-37/AQM-39
BQM-167 Skeeter
BTT-3 Banshee
Chinese Aerial Targets
EADS Target Systems
GQM-163A SSST
HTD-1 Skua
J/AQM-1 (Expendable Target Drone)
Mirach 100
MQM/BQM-74 CHUKAR
Multi-Stage Supersonic Target
Pakistani Target Drones
Pilotless Target Aircraft
QF-4 Phantom
Remotely Piloted Vehicle Target
Snipe
Tupolev UAV Programs
U.S. Helicopter Target

Introduction

The Beginnings. For centuries, there was no demand for aerial targets except for sport shooting. Archers practiced using a variety of methods, including shooting either live birds in flight or the equivalent of today's clay pigeons. Not until the development of the airplane would aerial targets be required to exceed this level of sophistication.

The First Modern Aerial Targets. The rapid development of military airpower during the 20th century saw a corresponding rise in requirements for air defense systems such as anti-aircraft artillery (AAA). By the end of World War II, Germany had more than one million soldiers manning an anti-aircraft defense system that included thousands of guns of varying caliber. The creation of modern air forces and air defense networks in turn generated demand for aerial targets to simulate hostile threats in AAA gunner and pilot training programs.

One of the first U.S. aerial targets was developed in the mid-1930s by Radioplane Company of California, a division of Northrop Aircraft Company. This company's radio-controlled model airplanes became the basis for the U.S. Army Air Corps' development of aerial targets for anti-aircraft gunnery training.

In 1935, Radioplane began developing the OQ-2A, based on a design by former movie star and model Reginald Denny. The OQ-2A was successful enough to generate contracts for almost 1,000 targets in 1943. While Radioplane developed the OQ-2A, other companies shared in production contracts, including the Frankfort Sailplane Company of Joliet, Illinois.

The OQ-2A was catapult-launched and recovered using a 24-foot-diameter parachute. Conventional landing gear cushioned the air vehicle's impact. After launch, gunnery target missions were flown by a ground controller using a "beep" box, so named because of the tones transmitted to the target's control system. The aircraft's small engine drove two coaxial, contra-rotating propellers. A skilled operator could duplicate fighter attack tactics for training gunners in the use of all anti-aircraft artillery weapons up to 40mm.

In response to subsequent U.S. Army and Air Force requirements for fast aerial targets with which to train AAA gunners, Radioplane developed the OQ-19 200-mph-class airplane in 1945. The OQ-19 was first flight tested in 1946. The target was capable of catapult launches, rotary launches from a circular runway, and air launches from a B-26C aircraft. When hit or out of fuel, the target was recovered using a 32-foot-diameter parachute. Some OQ-19Ds were fitted with integral flotation material to permit water recoveries.

U.S. Aerial Target Drones

Designation	Manufacturer	Production	Entered Service	Notes
A-8 Cadet	Culver		1940	Army Air Corps
PQ-8 Cadet	Culver	400	1941	Redesignated A-8
PQ-12	Fleetwings	10	1941	USAF Target Drone
PQ-13	Erco	200 *	1941	USAF Target Drone
PQ-14A	Culver	1,400	1944	1,200 transferred to Navy
PQ-14B	Culver	1,100		USAF Target Drone
PQ-15	Culver		1945-1946	
Q-2 Firebee	Ryan	1,000	1951	Later called BQM-34
Q-8	Culver		1948	Redesignated PQ-8
Q-14	Culver		1948-1950	New designation for PQ-14
TDC	Culver		1942	Navy PQ-8
TD2C Turkey	Culver	1,200	1944	Navy PQ-14
TD3C	Culver		1945-1946	Navy PQ-15
TD4C	Culver	2	1945	Navy Target Drone
UC-1K	Culver		1946	Redesignated TD4C

* Estimate

Four men were needed to launch this target, whether by catapult or the rotary method. A fifth man flew the target from other aircraft or the ground. At a range of 200 yards, the OQ-19 looked to gunners like a single-engine fighter at 500 yards. More than 10,000 OQ-19s were built for the USAF between 1955 and 1958. Of the four models, the D was the largest and fastest.

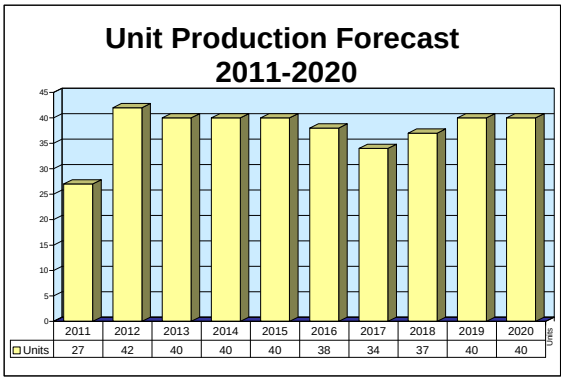
The United States was not the only country developing aerial targets at this time. During World War II, Germany developed a remote-controlled aerial target

Continued…

Pilotless Target Aircraft

Outlook

- In production
- Pilotless Target Aircraft-11 (PTA-11) in service with Indian military
- PTA-11 used in air-to-air and air defense gunnery training
- India might have a version to perform reconnaissance missions and to act as a strike weapon
- No export orders reported



Orientation

Description. Aerial target drones.

Sponsor. Indian Ministry of Defence through the Aeronautical Development Establishment, Bangalore, and the Defence Research & Development Organization (DRDO).

Status. PTA-11 full-scale development is nearly complete. India lacks a suitable propulsion system for the PTA-11. Production of PTA-11 prototypes may have commenced in 1992, and a batch of test vehicles was delivered to the Indian Air Force by 1996 and to the Indian Navy in 1997. Some deliveries to the IAF were not made until 2001.

Total Produced. By the end of 2010, 78 PTA-11s (including RDT&E and prototype units) and 2,079 MTs (no RDT&E units) were completed. Ten PTA-11s were built for the Indian Air Force by the end of March 2005. Total production of the PTA-11 does not include those air vehicles equipped with the indigenous PTAE-7 propulsion system.

Application. Simulation of aerial targets for surface-to-air gunnery and missile crew training, and air-to-air engagement training. The target will be used by the Indian Army, Navy, and Air Force.

Price Range. The estimated per-unit price of the PTA is INR5 million (approximately $290,000), and the MT is believed to cost in the area of $40,000. A complete PTA system, including six air vehicles and ground control stations, costs $5-$7 million. Delays have helped to push PTA-11's cost up to $500,000 per air vehicle.

Contractors

Prime

Hindustan Aeronautics Ltd	http://www.hal-india.com, 15/1 Cubbon Rd, PO Box 5150, Bangalore, 560 001 India, Tel: + 91 802 286 5197, Fax: + 91 802 286 7140, Prime

Pilotless Target Aircraft

Subcontractor

Hindustan Aeronautics Ltd - Engine Division, Bangalore Complex	http://www.hal-india.com, PO Box 9310, C V Raman Nagar, Bangalore, 560 093 India, Tel: + 91 80 5243628, Fax: + 91 80 5244686 (PTAE-7 Engine)

Comprehensive information on Contractors can be found in Forecast International's "International Contractors" series. For a detailed description, go to www.forecastinternational.com (see Products & Samples/Governments & Industries) or call + 1 (203) 426-0800.

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

Technical Data

	Metric PTA-11	**U.S.** PTA-11
Dimensions		
Length	600 cm	19.7 ft
Diameter(a)	330 mm	12.99 in
Weight(a) (Payload)	610 kg (35 kg)	1,342 lb (15.91 lb)
Performance		
Speed	Mach 0.4-0.85	Mach 0.4-0.85
Range	100 km	62.1 mi
Endurance	1 hr	1 hr
Altitude (min to max)	300 to 9,146.34 m	1,000 to 30,000 ft

(a) Estimate

Propulsion. The Pilotless Target Aircraft Engine-7 propulsion system, designated PTAE-7, was developed by Hindustan Aeronautics Ltd, Bangalore Complex, Engine Division, Bangalore, Karnataka, India. HAL began development work sometime during the late 1970s and early 1980s. The engine featured a four-stage, axial-flow compressor with a transonic first-stage, an annular combustion chamber, and a single-stage axial-flow turbine. The propulsion system was 1,100 millimeters long and had a maximum diameter of 330 millimeters; thrust was 350 kilograms, and the gross empty weight was 60 kilograms. Early air vehicles were powered by the Microturbo TRI 60 turbojet.

Russia may provide a new "rocket engine" that increases the drone's endurance from 45 minutes to several hours.

Control & Guidance. The PTA-11 uses a preprogrammed guidance system, although it has a radio communication link option for the remote initiation of specific maneuver programs.

Launcher Mode. The PTA-11 can be fired from a land-based launcher or a surface warship using a standard rail launcher with rocket assistance. This drone can tow subtargets and be reused up to 10 times.

Recovery. The PTA-11 will land in an open field via preprogrammed or command instructions. The primary landing impact is taken by the nose section, which is expendable and made of shock-absorbing composites; secondary impact is taken by the wingtips, which are also expendable.

PTA-11 Lakshya

Source: DRDO

Program Review

Background. India has slowly expanded the use of indigenous systems within its training program. The annual cost of training operations, especially for air defense missile gunners and pilots, can be considerable. New Delhi has sought to replace at least some of the aerial targets used every year in missile gunnery and pilot air-to-air combat training with indigenous alternatives. This desire led to the development of aerial target systems, specifically the MT and PTA-11.

Developing Indigenous Target to Meet Local Requirements

Air Vehicle Models. The PTA-11 and MT are part of the effort to provide the Indian military with indigenous aerial targets.

PTA-11. The program to design the Pilotless Target Aircraft, designated PTA-11 – also known as Lakshya (Aim) – commenced in the early 1970s. The initial work concentrated on the development of the Pilotless Target Aircraft Engine-7, also known as PTAE-7 (see Forecast International's *Aviation Gas Turbine Forecast*, HAL PTAE-7 report in Tab E). This program is part of India's overall effort to lessen its dependence on foreign suppliers for military-related equipment, and to develop a more diversified industrial base.

The PTA-11 is reusable. The entire craft consists of the main fuselage, wings, in-flight gas turbine engine, launch booster (which falls away after initial launch), and the two targets (one under each wing). In flight, one target at a time can be detached from the wing to trail behind on a steel cable. The fuel supply can sustain about one hour's flying time.

In addition to carrying a variety of payloads, the PTA-11 is designed as a tow vehicle. A reconnaissance version is likely to emerge.

India completed testing of its 16th prototype in late 1991/early 1992. A total of 18 prototypes were reportedly produced through the end of 1996. At this time, PTA-11 low-rate initial production was said to have commenced. This turned out to be untrue. Testing of the system continued, and by 2001 it was still not operational.

As of April 2001, only three of five promised PTA-11 air vehicles had been delivered to the Indian Air Force. No air vehicles have been received by the Indian Navy.

Apparently, India lacks a suitable propulsion system for the PTA-11, making serial production of this aerial target more and more doubtful. There are rumors that the program might be scrapped.

Pilotless Target Aircraft

MT. India manufactured an air-launched expendable missile target known as MT, also designated Ulka. Similar in configuration to Meggitt's Banshee, the MT is a non-maneuvering, long-endurance vehicle that simulates an approaching target. It is carried on underwing pylons and released over the test range at heights ranging from 800 to 9,000 meters. The MT has a speed of Mach 1.4 and a range of 35 to 70 kilometers. The air vehicle flies under autopilot command and is capable of controlled-altitude flight at as low as 50 meters. The MT has radar-augmentation devices and includes a command-destruct system. Production of the MT began in 1989 and has been concluded. The MT is still in use in India.

PTA-11 Cruise Missile. In October 2007, India said it had converted its Pilotless Target Aircraft-11 (PTA-11) Lakshya into a cruise missile with Israeli assistance. This new missile has a range of 600 kilometers and carries a 350-kilogram payload.

India's Aeronautical Developmental Establishment (ADE) and Israel Aerospace Industries (IAI) are involved in this project, worth $150 million. ADE, located in Bangalore, is India's sole unmanned air vehicle development laboratory; it operates under the auspices of the DRDO. The project includes three prototype cruise missiles.

The Russian-made TRDD 50 MT engine, built by NPO Saturn, will power this new cruise missile. It was thought that laboratory tests could have begun in 2008, with flight trials under way in July 2008.

There is some concern that the engine purchase could violate the Missile Technology Control Regime (MTCR) restrictions. Although India did not sign the MTCR agreement, Russia did. However, DRDO officials say the engines are for a UAV, not a cruise missile.

Lakshya 2. The Defence Research and Development Organization (DRDO) successfully conducted a flight test of Lakshya-2 in January 2011. This target drone will simulate threats flying at low altitudes (15 to 25 meters above sea level), such as anti-ship cruise missiles. Aeronautical Development Establishment (ADE) is working on this aerial target.

Related News

Successful Flight Test of Lakshya 2 Target Drone – India performed a successful flight test of its Lakshya-2 aerial target drone, which was also the first flight of this unmanned air vehicle. The drone flew for 32 minutes at low altitude. This aerial target can fly at 15-25 meters above sea level. India's Aeronautical Development Establishment (ADE) is working on the Lakshya 2. This drone is able to simulate a low-flying cruise missile. The Lakshya 2 uses an engine produced by Hindustan Aeronautics and other Indian companies.

India plans to develop two versions of the Lakshya 2: one for recovery on land, and another for use at sea. (Flight, 1/11)

New UAV from HAL May Soon Reach Indian Military – The Indian military may soon receive a new unmanned air vehicle from a local source. This new UAV may be available within two to three years, according to Hindustan Aeronautics Limited (HAL), which is working on the new UAV in cooperation with the state-run Defence Research and Development Organization. HAL already developed the Lakshya, and is now working on the Lakshya Mk II. The Lakshya Mk II will be used for air-to-air practice, but is not for use in combat or for surveillance missions. (Oneindia, 5/10)

Local Company Provides UAVs to the Indian Air Force – A local company in India is providing unmanned air vehicles to the Indian Air Force. Bhogal Hobby Tech, based in Ludhiana, is building this UAV, which was developed independent of the state-run Defence Research and Development Organization and without financial assistance from the Indian government.

The UAV weighs 28 kilogram and uses an 80cc engine. The wingspan of the air vehicle is 5.5 meters. The company provided the UAV to the Indian military in March. The company already supplies aerial targets to the Indian Air Force and Indian Army. The cost of this UAV system is Rs 0.6 million. Bhogal began work on this UAV some five years ago. (*Daily Times*, 5/10)

Funding

Few details are available concerning Indian spending on the PTA-11 program. New Delhi has said the PTA-11 cost over Rs 165 crore by 2008. Some sources do expect an initial production run of more than 1,000 PTA-11s. Indian sources claim that five units were ordered in late 2002, but another source said 25 targets had been purchased.

Indian Defense Budget Figures

	FY09 QTY	FY09 AMT	FY10 QTY	FY10 AMT	FY11 QTY	FY11 AMT	FY12 QTY	FY12 AMT
Indian Rupees	-	1,417.000	-	1,473.440	-	1,487.850	-	1,606.878
U.S. dollars	-	30.355	-	31.564	-	31.873	-	34.423

All values are in billions.

Timetable

Month	Year	Major Development
Early	1970s(a)	PTA design conceived
Late 70s-early 80s(a)		PTA research and development initiated
through	1989	Six PTA engines built for testing
	1989-90	MT unmanned air vehicle enters production
	1990	16th PTA prototype completed and in-flight testing begun
	1991	New family of UAVs announced by India
Jul	1998(a)	Initial low-rate production of PTA-11
	2001	New problems concerning PTA-11 surface
		India considers scrapping PTA-11 program
Sep	2001	Indian minister announces PTA-11 low-rate production start
	2003	Five PTA-11s delivered
	2004	PTA-11 operational
	2006-07	Lakshya used in Indian tests
	2008	Lakshya used in Indian tests
		Problems may delay program again
Oct	2009	PTA-11 in three-day exercise at Integrated Test Range
	2011	Production continuing

(a) Estimate

Worldwide Distribution/Inventories

India is offering the PTA-11 on the export market and claims that an overseas order will be placed in the near future. Three unidentified countries have expressed interest in the PTA-11.

Israel mentioned an interest in the PTA-11, but in 2005 decided against procurement of this aerial target. Negotiations had been under way since 2003.

User Country. The initial operator of the PTA-11 will be **India**, which already operates the MT aerial target.

Forecast Rationale

The Pilotless Target Aircraft-11 (PTA-11) Lakshya is meeting part of its training drone requirement. This jet-powered aerial target is used to train Indian fighter pilots and air defense gunners, as well as weapon system testing and evaluation.

The Lakshya has a long and troubled history. This program holds the record for the longest target design effort ever launched. Work on this target drone commenced more than 30 years ago. Despite numerous calls for its termination, India overcame technical problems and finally put the PTA-11 into production.

Pilotless Target Aircraft

Still, the lack of progress on the PTA-11 forced India to extend procurement of similar aerial target drones from foreign sources.

Production Not Stopped by Problems

India's state-run Defence Research and Development Organization (DRDO) and Hindustan Aeronautics Ltd (HAL) say the problems with the PTA-11 Lakshya are over. Nevertheless, Indian officials continue to contradict one another concerning the status of the PTA-11 and the level of annual production.

Reportedly, the Indian Air Force has finally inducted the PTA-11 into service. The Indian Ministry of Defence actually cleared this target drone for bulk production before its induction. These seem to be mutually exclusive statements, but not in India. No one can agree on the exact annual production of the Lakshya either. Some say production is proceeding, while others are predicting its imminent demise. Information on deliveries is also unavailable.

Whether full-scale production of the PTA-11 has begun is irrelevant, since India has run numerous defense programs at very uneconomical rates for years (sometimes decades). Annual production is growing, but at a very slow rate. Since the Indian government is less than forthcoming in providing accurate information on PTA-11 build rates, take caution when viewing our figures for the PTA-11. Purchases of foreign systems to meet training and testing requirements and to supplement the PTA-11 fleet will continue. Only time will determine the ultimate success of the PTA-11 Lakshya aerial target.

Our forecast does not anticipate any export orders for the PTA-11 Lakshya.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	**High Confidence**					**Good Confidence**			**Speculative**			
	Thru 2010	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
Hindustan Aeronautics Ltd												
PTA-11 <> Lakshya												
	78	27	42	40	40	40	38	34	37	40	40	378
Total	78	27	42	40	40	40	38	34	37	40	40	378

FORECAST INTERNATIONAL

ORDER FORM

FOR PROPER SHIPPING, PLEASE PROVIDE ALL OF THE FOLLOWING INFORMATION.

Name _____ Title _____

Company _____

Street Address _____

City _____ State/Prov. _____ Country _____ Zip _____

Phone _____ Fax _____

E-Mail _____

Cardholder Name _____

Card# _____ Exp. _____ csc# _____

Billing Address (if different from above) _____

_____

☐ Check Enclosed
☐ Bill Company
(Purchase Order # and Signature Required)
☐ Quotation Requested
☐ VISA ☐ MasterCard
☐ American Express

Name of Product/Service	Code	E-Mail Address	Qty.	Price

Please include your e-mail address to receive twice-weekly E-Market Alert Newsletters.

E-Market ALERT

Subtotal _____
Shipping _____
In Connecticut add 6% sales tax _____
Grand Total _____

SHIPPING AND HANDLING RATES

	U.S.	World
Market Intelligence Services		
Binder	$45	$85
DVD	$50	$95
Binder & DVD	$95	$180
Binder & RT	$45	$85
Worldwide Inventories		
Aerospace Systems		
CD	$50	$95
Weapons Systems		
Hard Copy	$45	$85
CD	$50	$95
Power Systems		
Hard Copy	$45	$85
Focused Market Segment Analyses		
Hard Copy	$25	$45

	U.S.	World
Market Intelligence Libraries		
Complete Library (Civil/Commercial & Military)		
Binder	$1,575	$2,975
DVD	$50	$95
Military Market Library		
Binder	$1,440	$2,720
DVD	$50	$95
Civil/Commercial Library		
Binder	$360	$680
DVD	$50	$95
Market Intelligence Group Libraries		
Aerospace		
Binder	$360	$680
DVD	$50	$95
Electronics		
Binder	$360	$680
DVD	$50	$95

	U.S.	World
Governments & Industries		
Binder	$540	$1,020
DVD	$50	$95
International Military Markets (A Subset of G&I above)		
Binder	$270	$510
DVD	$50	$95
Naval		
Binder	$90	$170
DVD	$50	$95
Power		
Binder	$90	$170
DVD	$50	$95
Weapons		
Binder	$180	$340
DVD	$50	$95

NOTE: No charge for Real-Time format.

2011 Historic Art Calendar $5.95 $12.95

NOTE: ORDERS CAN TAKE UP TO 5 BUSINESS DAYS TO SHIP.

22 Commerce Road, Newtown, CT 06470 USA • Phone: 203.426.0800 • Fax: 203.426.0223
Toll-Free (U.S. and Canada): 800.451.4975 • E-mail: sales@forecast1.com • Website: www.forecastinternational.com

WORLDWIDE SALES OFFICES

HEADQUARTERS USA

FORECAST INTERNATIONAL INC.
22 Commerce Road, Newtown, CT 06470 USA
Phone: 203.426.0800 Fax: 203.426.1964

SALES/CUSTOMER SERVICE/MARKETING
Phone: 203.270.0633 Worldwide
Toll-Free: 800.451.4975 U.S. & Canada
Fax: 203.426.0223
E-Mail: sales@forecast1.com
E-Mail: info@forecast1.com
E-Mail: customerservice@forecast1.com

PROPRIETARY RESEARCH & CONSULTING
Phone: 203.426.0299 Fax: 203.426.1964
E-Mail: consulting@forecast1.com

EDITORIAL
Phone: 203.270.0111 Fax: 203.426.4262
E-Mail: queries@forecast1.com

TECHNICAL SUPPORT
Phone: 203.270.0629 Fax: 203.426.0223
E-Mail: support@forecast1.com

WEBSITE ADDRESSES
www.forecastinternational.com
www.fiplatinum.com

HEADQUARTERS EUROPE
(INCLUDING RUSSIA)
HAWK ASSOCIATES LTD.
UNITED KINGDOM
Templehurst House
New Street, Chipping Norton
Oxon, OX7 5LJ, U.K.
Phone: (44) 1608 643281
Fax: (44) 1608 641159
E-Mail: support@hawkinformation.com
Website: www.hawkinformation.com
Contact: Mr. Michael Hobbs

HAWK ASSOCIATES LTD.
FRANCE
6 Rue de Levis, Paris 75017 FRANCE
Phone: (33) 1 4294 0693 Fax: (33) 1 4294 0433
E-Mail: france@hawkinformation.com
Contact: Mr. Edward Hobbs

CHINA AND SOUTHEAST ASIA
CHINA NATIONAL PUBLICATIONS
I & E GROUP CORPORATION
PO Box 88
16 Gongti East Road
Chaoyang Beijing 100020 CHINA
Phone: (86) 10 6506 6688 ext. 8307
Fax: (86) 10 6586 6970
E-Mail: xiaoxiao0640@hotmail.com
Contact: Mr. Xiaoxiao Zhang

JAPAN
AVIATION RESEARCH INSTITUTE
1-427-2 Takano
Misato City Saitama Pref
Tokyo 341-0035 JAPAN
Phone: (81) 489 71 5040
Fax: (81) 489 55 7151
E-Mail: max@arijapan.com
Website: www.arijapan.com/forecast
Contact: Mr. Kenichi Oyama

REPUBLIC OF KOREA
PAMANONG TRADING COMPANY
275-2 Yangjae Dong
Seocho-Gu Seoul 137-722 KOREA
Phone: (82) 2 572 4349 or (82) 2 572 4371
Fax: (82) 2 572 4370
E-Mail: nhk@forecast1.com
Website: www.forecast1.co.kr
Contact: Ms. Nam Hee Kim

TERMS AND CONDITIONS

DISCOUNT PRICING
Discount Pricing – Codes prefaced by CH, RH, Z, P or RTPS, and multi-user subscriptions, include a discount that is reflected in the marketed cost.

BOOKSELLER DISCOUNTS
For information, call 203.270.0633 or 800.451.4975 (Toll-Free U.S. & Canada). E Mail: info@forecast1.com.

NEW CLIENTS
Payment in full is required with the initial order.

TERMS
Net 30 days. For overdue accounts we reserve the right to assess interest of 12% annually, and add collection fees.

PURCHASE ORDER
If company requires, please submit a purchase order to ensure timely delivery.

RETURNS OR REFUNDS
Due to the nature of our products, no returns are accepted and no refunds are provided.

FORMS OF PAYMENT
We accept VISA, MasterCard, American Express, or a company check drawn on a U.S. bank in U.S. dollars. Wire Transfer Details: Contact customerservice@forecast1.com or call 203.270.0633.

Please ensure bank charges are not deducted from the total amount due. Note: Include the quotation or invoice number with your payment.

DATA USAGE
Photocopy/Copyright Permission: Forecast International observes all Copyright laws. Reproduction and distribution of any product is prohibited by law. To obtain a release, please call 203.270.0633 or contact customerservice@forecast1.com.

ELECTRONIC DATA LICENSING
All products provided on DVD or CD, or in Real-Time, are sold and licensed for single-site, single-user applications. Multi-site, multi-user licensing is available. Call 203.270.0633 or contact sales@forecast1.com to discuss your requirements.