

THE TELEPHONE COMPANY





TACTICAL AIR-LAUNCH capabilities demonstrated by Model 350 on Oct. 22, 1988 during a 22-minute first flight was made from an F-4C "Phantom" fighter. Sequence of photos illustrates the Medium-Range UAV's stability through the air-launch procedure. Flight was concluded by deployment of Model 350's onboard parachute.

Teledyne Ryan Aeronautical helped give birth more than 25 years ago to an 'Age of the Remotely Piloted Vehicle.' Now, it is tasked to help introduce the new . . .

Era Of The UAV

Under terms of an initial contract valued at \$69.6 million that was issued June 30 by the Naval Air Systems Command, Teledyne Ryan Aeronautical is engaged in full-scale engineering development of a Medium-Range Unmanned Air Vehicle (MRUAV) system for use by the Navy, Air Force and Marine Corps.

TRA President Robert A.K. Mitchell said the new requirement represents one of the largest orders of its kind in his company's 67-year history.

As significant as the work period of more than three years that lies ahead for TRA is the evolution of an advanced technology system that will complement manned air-reconnaissance requirements. In operational use, according to the Unmanned Aerial Vehicles Joint Project Office in Washington, D.C., the MRUAV will provide a quick-response capability for obtaining high-quality imagery of heavily defended targets in advance of and following air strikes.

The selection of targets as well as weapons to be used will be based largely on the imagery provided by the MRUAV system which is to be designed for tactical air-launch operations.

Guiding TRA's MRUAV operations will be Vice President Norman S. Sakamoto, a veteran Remotely Piloted Vehicle (RPV) program manager at TRA since the early 1960s. It was during the Vietnam era that TRA developed and produced a family of RPVs for reconnaissance and related military missions and earned distinctions for helping introduce the technology as well as air vehicles that opened the "Era of RPVs" in America.

Sakamoto's subsequent assignments included management of the high-altitude, long-endurance Compass Cope program in the late 1970s. Under contract to the Air Force, two of the broad-winged RPVs were built and flight-tested, establishing a world record for unmanned long-endurance flight.

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FAMILY of unmanned vehicles designed, developed and produced by TRA includes (from top, clockwise) Model 324 advanced technology RPV system with Launch and Recovery Vehicle; AQM-34L RPV system; Firebolt high-altitude, supersonic aerial target; BQM-34E/F Supersonic Firebee; Model 410 long-endurance UAV. Not shown is Model 350 medium-range UAV.

350 was launched into flight, climbed by remote control to 27,500 feet, commanded through a series of turns and banks, then descended to 10,000 feet for command of parachute recovery over a preselected site.

Flying in the F-100 chase aircraft, observer-photographer John Ligon would remark during a flight debrief session that "it was the smoothest air launch I've ever witnessed. The Model 350 performed flawlessly!"

The 16.3-foot-long Model 350 was displayed before global audiences attending 1989's Paris Air Show as a focal point of Teledyne's combined exhibits representing 27 subsidiary companies. Significantly, it was the Ryan *Spirit of St. Louis* in 1927 that captured the world's admiration in the City of Lights.

Lindbergh's historic landing in Paris following 33 hours and 30 minutes after takeoff from Roosevelt Field in Long Island, N.Y. was chronicled worldwide as the flight test that opened the way for transoceanic flight.

From that point in the early day history of manned flight and an infinitely broad range of innovative aircraft concepts that followed, the company that built Lindbergh's "Spirit" has maintained a consistent presence on the leading edge of aviation.

Against that backdrop is posed yet another advance, one which could well be the most significant in military operations yet devised.

Selected to complement manned air-combat requirements, vehicles like the MRUAV could help avoid the exposure of human aircrews to hostile conditions too severe for manned strikes. Military commanders could select mission-configured UAVs for reconnaissance of heavily defended targets. And, following designated strikes against those targets, conduct postmission reconnaissance for damage assessments.

Not until its implementation, sometime in the early half of the next decade, can the full range

of potential applications offered by MRUAVs be fully developed. Beyond all question in this summer of 1989, there exists a requirement by the Navy, Air Force and Marine Corps for its availability.

The full-scale engineering development of an all-new MRUAV is a threshold leading to the dawn of perhaps a new period of innovative flight.

One that will someday be recognized as the *Era of the UAV*.

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More recently, starting in 1984 under contract to the government of Egypt, Sakamoto guided to a highly successful conclusion four years later, the design, development and flight testing, of an advanced technology RPV system. Twenty-nine RPVs and three Launch and Recovery Systems, from which the RPVs are ground-launched into flight and commanded and controlled, have been delivered to Egypt.

It was, to a large degree, the successful conclusion of the Model 324 program and a series of flight tests at TRA's Flight Test Facility based at the Mojave airport, that triggered TRA's confidence as it entered into the MRUAV competition in early 1988.

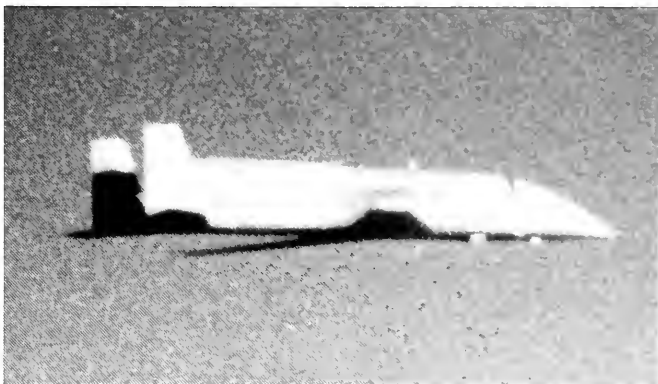
From its decision to enter the competition, develop a formal proposal, design, develop and start flight-test operations of a proof-of-concept Model 350 MRUAV, required 59 days! Sixty-one years earlier, the company entered into an equally daring mission: to design and build the Ryan *Spirit of St. Louis* for use by Charles Lindbergh in his epic, solo flight across the Atlantic.

The Model 350 program beat that record by 24 hours. And topped its own marathon efforts with a "textbook perfect" 22-minute maiden flight by the Model 350 prototype Oct. 22, 1988.

Leading the way for its maiden flight was a series of captive tests while suspended from

an F-4C leased by Flight Systems, Inc. Because there was only this single prototype, Sakamoto's team inched its way through the captive flight-test program as systems integration and aerodynamic verifications were secured with each successive captive flight.

Because of tightly restricted airspace surrounding the Mojave Civilian Flight Test Center,



MODEL 350 achieved flawless first flight October 22, 1988

captive flight test operations by the TRA team were conducted only on weekends and within a "window" of several hours duration.

The air-launch operation on Saturday, Oct. 22 proceeded through the usual preflight systems checks, starting in the predawn hours. Uploaded aboard the "Phantom" fighter and following a final series of integration system checks, the air-launch aircraft roared down the runway with its Model 350 intact.

At 7:15 a.m. and 15,000-foot altitude, Model



TRA'S 500TH Apache airframe poses against production version advanced attack helicopter following presentation ceremony

After six consecutive years of involvement in manufacturing and final assembly operations associated with the world's most advanced combat helicopter, Teledyne Ryan Aeronautical notched a new milestone April 4, 1989 by presenting to McDonnell Douglas Helicopter Company and the U.S. Army its 500th airframe shipset for . . .



For all of its pioneering aviation and aerospace achievements spanning 67 years of operations in San Diego, there would come yet another in the early days of April this year.

Apache airframe number 500 with wings, tail boom assembly, empennage, hatches and fairings—fully the largest physical structure associated with the advanced attack helicopter—was presented in formal ceremonies.

In testimony to the achievement was offered the congratulations of U.S. Senator Pete Wilson, a member of the Senate Armed Services Committee.

Wilson, a former San Diego mayor and state assemblyman, praised TRA employees for the qualities of workmanship and demonstrated reliability of the Apache's performance as the U.S. Army's frontline tank killer.

Master of ceremonies and Senior Vice President, Operations, Bill Cassidy helped set the stage for ceremonies that included as an audience some 1,500 employees to

witness the rollout and presentation of the milestone shipset.

An operational Apache, flown to San Diego

from Mesa, Ariz. to remind the audience of the awesome physical characteristics when fully assembled, created a backdrop to the morning's activities.

TRA President Bob Mitchell told of his "orientation" flight late last year in an Apache at McDonnell Douglas Helicopter Company's Mesa Final Assembly and Flight Test Center. He termed the flight, which began in the late evening and continued into darkness, "the biggest thrill of my flying career."

Mitchell commended TRA's Apache team members for "this milestone achievement" and called for continued dedication to the program that "has added new distinctions to our capabilities and produced global recognition of our accomplishments."

Teledyne, Inc. Senior Vice President Hudson B. Drake—until January 1988 TRA's chief executive and Mitchell's immediate predecessor—hailed the 500th Apache delivery as an achievement that "many believed would never (Continued on Page 6)





ARMY COLONEL Bither fields questions from TRA Apache employees (left). AH-64 Apache was placed on static display following ceremony.

(Continued from Page 5)

come." His reference was to a period in early 1984 when the company was experiencing major difficulties in meeting delivery schedules and quality standards.

He recalled that period, asking for a show of hands in the audience of those who also were assigned here to the Apache program. A forest of hands shot up in the assembly, acknowledging with pride how far the program had come.

From McDonnell Douglas Helicopter Company came Executive Vice President, Program Management, Norman B. Hirsh, to accept on behalf of his company the 500th Apache airframe and its shipset components.

Recalling the start 16 years ago of Apache operations in which TRA helped provide airframes and components for six prototype aircraft and a subsequent production require-

ment for Apaches that was issued in 1981, Hirsh spoke warmly of the "team association" between his company and TRA in supplying the U.S. Army with the world's finest aircraft of its kind.

He said that the Apache fleet now has more than 160,000 hours of accumulated flight time with three Apache battalions now deployed in West Germany and 11 more scheduled for deployment in Europe as well as in South Korea.

"The Apache is doing everything the Army hoped for plus much more," he noted, quoting a message from the Army staff:

"In the Apache, the Army has a superb fighting system—the best of its class in the world. Every day, we're learning that the Apache's fighting potentials exceed our expectations as well as our ability to exploit that potential."

"We have climbed many mountains to-

gether," noted Hirsh, pointing to his acceptance of the 500th airframe shipset and those he expects to be delivered to the U.S. Army. Production is expected to continue through mid-1993 under current requirements, with potential international sales to follow, according to Hirsh.

To close the ceremony was Army Colonel Rodney Bither who, accompanied by Chief Warrant Officer Terry Rose, flew the Mesa-based Apache to San Diego for its display.

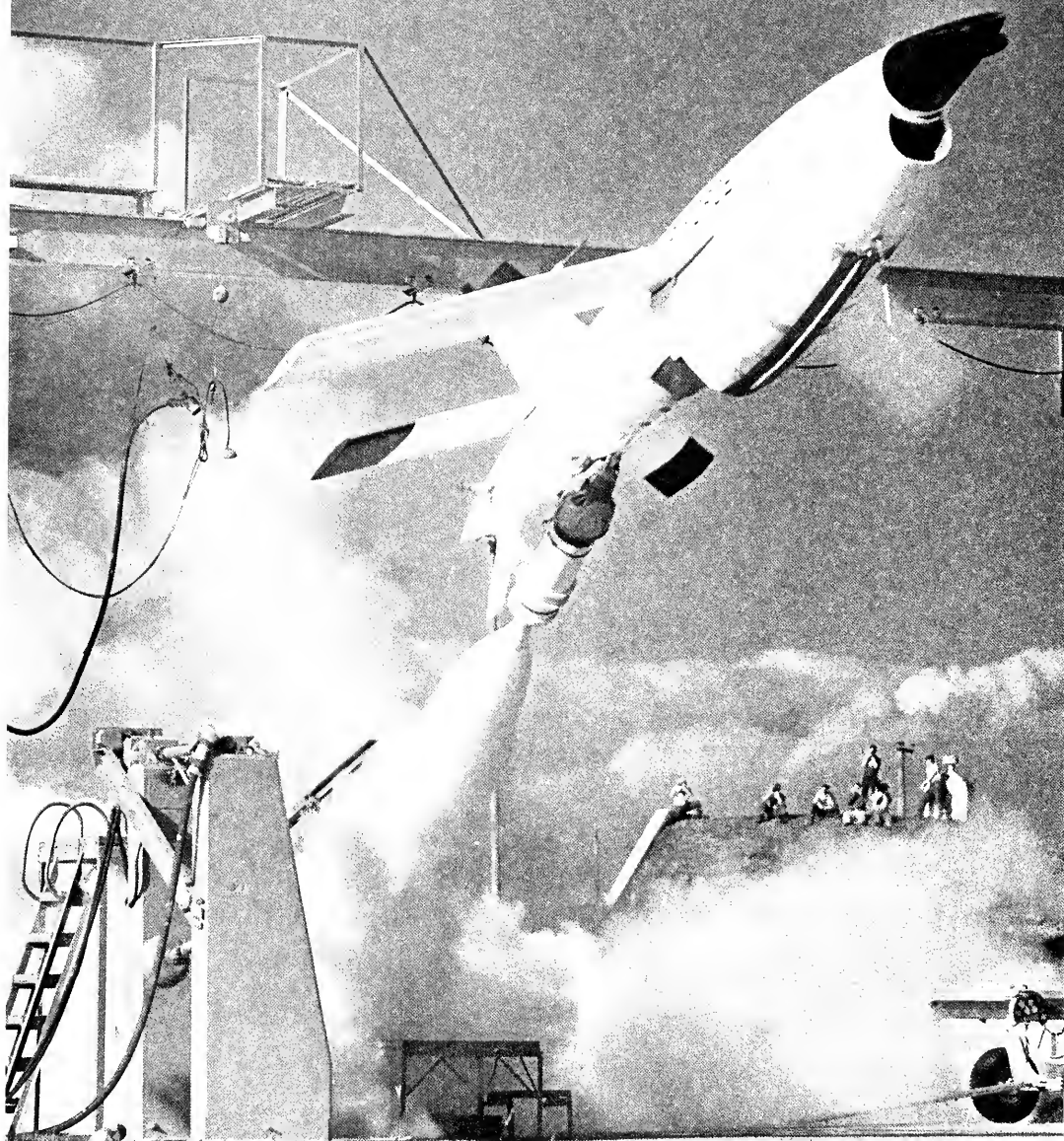
Referring to TRA as the "home" of the Apache, "because you provide the biggest single component of the aircraft," Bither singled out for his personal commendation TRA's "supervisors, foremen and team leaders—the small units within the overall program—who really deserve the credit for the accomplishment we're witnessing today."

SHIPSET components for 500th airframe were displayed for audience inspection during ceremony



In a grueling 22-minute display of newly developed performance qualities, an Air Force BQM-34A Firebee has helped to introduce a new era in the art of . . .

Threat Simulation



'The Firebee helps us every day in learning more about our aircraft and its weapon systems.'

Colonel William K. Matthews
U.S. Air Force

An improved version of Teledyne Ryan Aeronautical's venerable Firebee aerial target system has helped to begin a chapter in threat simulation for the U.S. Air Force, adding to a history that now spans more than four decades.

The BQM-34A Firebee, equipped with a Microprocessor Flight Control System (MFCS) and an uprated turbojet engine, completed its inaugural flight Friday, April 28, 1989 over Gulf of Mexico ranges adjacent to Tyndall and Eglin Air Force bases in Florida.

From ground launch at Tyndall to parachute recovery, the remotely controlled drone performed "without a hitch," according to TRA Director of Firebee Programs, Walt Hamilton. He said the ground-launched target climbed on command, first to 10,000 feet, then to 20,000 feet to perform a broad range of turns, banks and other evasive maneuvers characterizing an enemy threat source.

Colonel William K. Matthews, commander of the 475th Weapons Evaluation Group based at Tyndall, and under whose cognizance aerial target operations are conducted, said the improved Firebee's first flight produced "very favorable" reactions.

It was Matthews who accepted delivery of the same Firebee on its rollout Jan. 17 in a symbolic start of new Air Force Firebee production.

"The flat, smooth launch and climb-out was very impressive," he noted, adding that "the Firebee helps

us every day in learning more about our aircraft and its weapon systems; what I might need to do to attack an enemy aircraft."

Master Sergeant David Kitchens, the non-commissioned officer in charge of the 475th Group's subscale targets branch, explained what advantages the improved Firebee represents in the user environment.

"First, the new flight control system (MFCS) makes the Firebee a more challenging and versatile aerial target. As it expands the drone's performance envelope with more precise control, it also allows for a wider selection of maneuvers, such as barrel rolls and other evasive tactics.

"All of these qualities make the Firebee more challenging during actual missile firing training exercises," he observed.

Included in the MFCS are automatic speed controls, airspeed references, and acceleration mode, automatic in-flight self-testing and

drone's thrust to two times its weight, depending on mission configurations. The engine is stocked in government inventories following use in manned aircraft. With the incorporation of the higher thrust engine and a three-axis autopilot, the new Firebee is able to perform at higher climb rates and maneuvers at 6 g's.

TRA Vice President, Business Development, Tony Richards said that an initial order for 50 of the improved Firebees will be delivered to Tyndall at rates of nine units monthly through late 1989. Deliveries are being made, meanwhile, of Army MQM-34D Firebees and Navy BQM-34S versions of the high-performance drones.

Currently, the Air Force is averaging 14 flights per Firebee, a rate of utilization that is

expected to increase with the improved BQM-34A systems, according to Richards. He said that the newly developed MFCS combined with added thrust offers a significantly increased rate of survivability.

It was a joint Air Force-Army requirement issued in 1949 that led to the development of a growth-version Firebee. Since then the high-performance drone has experienced six modifications in airframe, command and control systems, as well as in the propulsion systems.

As the largest subscale aerial target system in U.S. inventories, the Firebee's new enhancements are designed to help

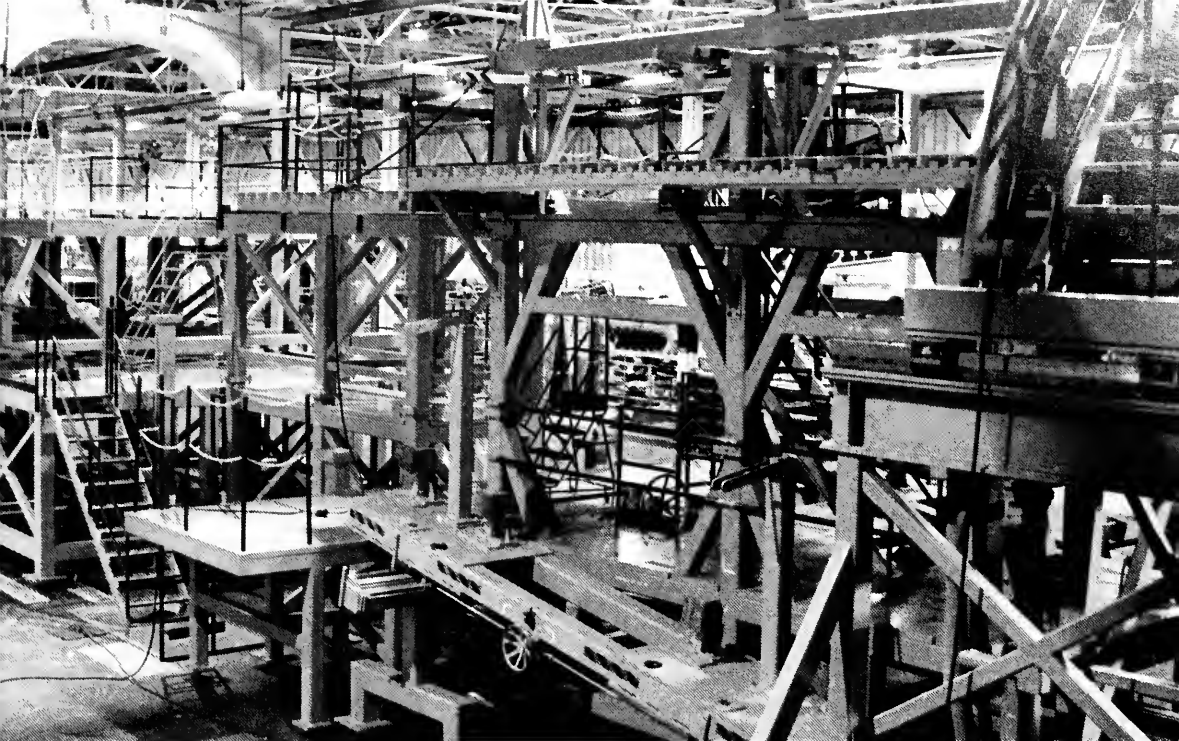
support weapon systems development, test and evaluation, and for utilization in combat training programs.



FIRST of 50 uprated Firebees was rolled out in January during formal ceremonies

fault diagnostic capabilities.

The BQM-34A's new propulsion system is a recycled J85-100 turbojet that boosts the



C-17 TOOLING FIXTURE delivered by TRA in April stands three stories tall and measures triple that distance in length

Evolution of the Air Force's new C-17 airlifter transport projects a new era in air mobility for the United States. Not unlike major advances in aviation and aerospace of the past, Teledyne Ryan Aeronautical is once again helping . . .

outset to provide inter- as well as intratheater airlift. This flexibility will reduce deployment time and congestion at rear-area aerial ports, eliminate needs to transship materials to forward areas and ease demands on C-130s for intratheater airlift.

TRA's initial involvement with C-17 support

October 1987. More than 450 assembly-type tools were completed by April under this same pact, according to TRA Director of Tooling, Rudy Cribb.

He said that TRA is currently engaged in creating 70 production part patterns to be delivered to Douglas' Long Beach facility and

Build For The Future

Standing three stories tall and triple that measure in length, the largest tooling fixture of its kind built by Teledyne Ryan Aeronautical has been delivered to Douglas Aircraft for use in producing the new Air Force C-17 airlifter transport.

The fixture will be used in mating aft fuselage sections of the behemoth transport in Douglas' final assembly facility at Long Beach, Calif. A first flight of the C-17 is scheduled in late 1990 with 12 aircraft to begin initial operations with the Military Airlift Command in 1992.

Air Force plans call for a total of 210 C-17s, subject to budgetary requirements. It will be the first transport aircraft to be designed from the

included creation of master models of the C-17's main landing gear wheel pods. Built under contract to McDonnell Douglas Helicopter Company, the master models were the largest of their kind built by TRA. Each landing gear pod on the C-17 houses 12 wheels. The master models from which the pods will be constructed measure 16 feet in width and more than 70 feet in length. The project included use of 37 tons of plaster which was "sculpted" over more than 200 templates, each weighing 400 pounds.

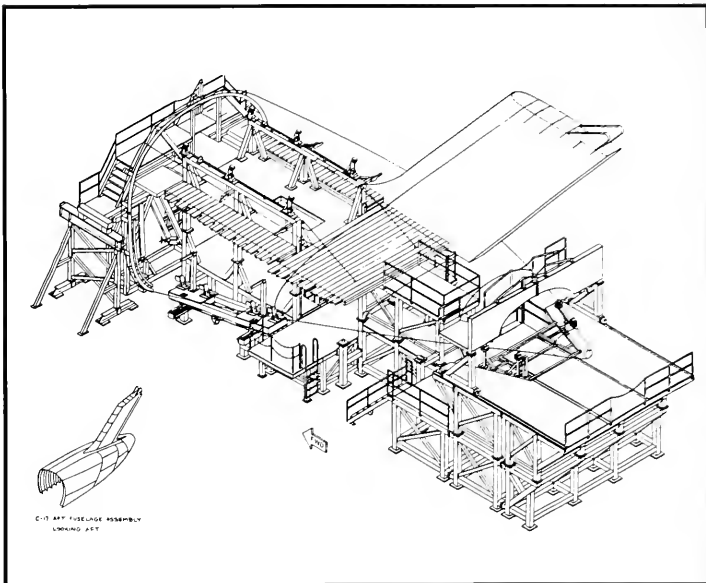
Work on the aft fuselage tooling fixture began at TRA late last year under a Service and Support contract which was awarded in

over 63 more to MDHC facilities at Mesa, Ariz. The patterns will be used in fabrication of the wheel pod surfaces.

Cribb believes the two C-17 requirements and TRA's response has helped establish a berth for the company on the C-17 team. "We've certainly distinguished our capabilities, creating awareness of the diverse range of talents we possess." He believes that TRA offers response to broad ranges of work requirements in military as well as commercial aircraft programs.

Of immediate interest to Cribb are the requirements associated with C-17 production **(Continued on Page 10)**

ILLUSTRATION shows how tooling fixture will be used in mating of aft fuselage section of C-17. Aircraft's fuselage, when fully assembled, will measure 175.2 feet, featuring a cargo bay 88 feet long and 18 feet wide.



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operations. He anticipates that TRA will be called upon—as it has been in the past—to shoulder some of the work responsibilities as production operations intensify.

The needs of the Army and Marine Corps were driving factors in the design of the C-17. The cargo hold, for instance, was sized to accommodate an Army AH-64 Apache helicopter, from the ground to its rotor cap. The cargo hold stretches 88 feet in length and 18 feet in width. With a wingspan of 165 feet, the C-17 fuselage measures 175.2 feet and is powered by 4 jet engines which generate a combined thrust of 166,800 pounds.

The C-17's unique qualities of design will enable it to take off with a payload of 167,000 pounds from a 7,600-foot runway, fly 2,400 nautical miles and land on a small, austere airfield in 3,000 feet. The ferry range is 4,700 nautical miles.

Final assembly of the C-17s is scheduled at Long Beach in Douglas' Building 54 which covers more than 25 acres of under-roof floor space.

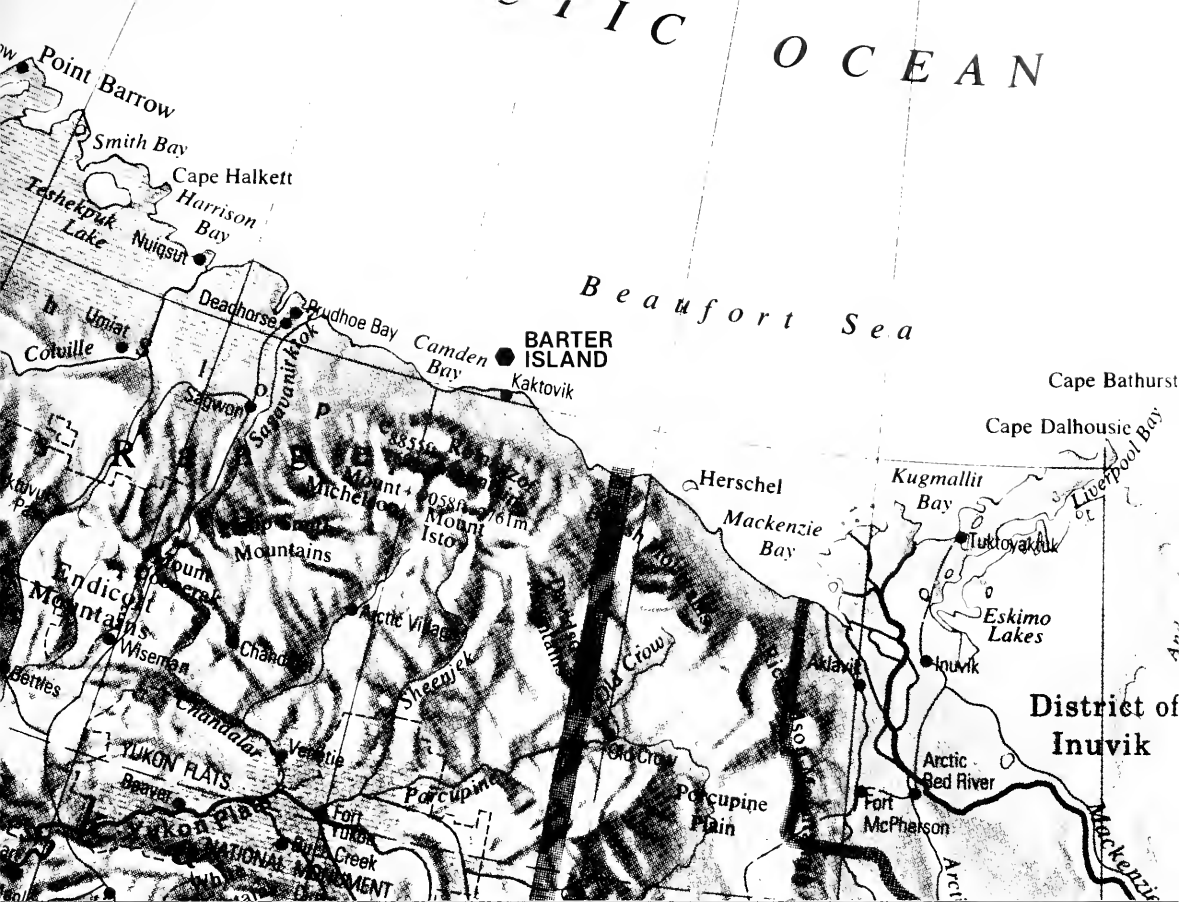
The aft fuselage tooling fixture built by TRA is sized to handle mating of structures that include the aircraft's T-tail assembly.

With delivery of the fixture now completed, Cribb views the project as a major test of capabilities possessed by TRA. "We've demonstrated responsiveness to unique requirements in two separate C-17 projects. I'm confident that we'll continue our association with the C-17 program well into the future."

ART RENDERING of C-17 airlifter in a 'wheels down' approach to landing depicts pods that house 12 wheels. TRA created master models of pods under contract to McDonnell Douglas Helicopter Company, then built tooling fixture.



The two requirements have helped establish a berth for the company on the C-17 team.



Never before had RPVs been assigned to missions in this area of the globe. The Air Force 6514th distinguished its assignment, using vintage drones to operate in the latitudes of . . . **70 Degrees North**

For 26 days of constant daylight during the month of June 1989, a contingent of Air Force 6514th Test Squadron personnel supported by a small group of Teledyne Ryan Aeronautical technicians performed a mission unlike any in the history of unmanned aircraft operations.

Operating from tiny Barter Island, a remote North Warning Site that helps guard Alaska's north slopes from attacks against North America, the Hill AFB, Utah-based squadron conducted 16 flights of vintage RPVs in simulations of threat sources.

Under the program management of veteran TRA field service engineer Billy Sved, eight AQM-34L Remotely Piloted Vehicles (RPVs) restored to active inventories, were air-launched into flight from the 6514th's NC-130H transport.

Uploaded aboard the launch aircraft and flown out to distances of 100 miles over the

Arctic Ocean, each of the drones conducted simulations of cruise missiles and attacking aircraft in tests of a newly installed radar system located at Barter Island.

Captain Larry Wineteer, RPV Program Manager for the 6514th and pilot of the NC-130H aircraft which is configured for air launch, tracking, command and control operations, termed the assignment one of "milestone" significance.

His squadron conducted similar tests of Over-The-Horizon-Backscatter radar systems guarding the southeast section of the United States in early 1988. Operating from Puerto Rico, Wineteer's group air-launched a series of drone flights into overwater missions between Puerto Rico and Bermuda.

Again, in late 1988, the group conducted drone operations off the coast of Bangor, Me., supporting sea trial missile firings by the Aegis

cruiser USS Philippine Sea. The drone simulated cruise missiles and aircraft attacks.

Not since the close of Vietnam hostilities, when surplus Model 147 RPVs were placed in storage by the Air Force, had operations of this kind been conducted. Faced with requirements for test operations, the Air Force took 53 of the vintage drones from its storage facilities in late 1977. They were transferred to Hill AFB for flight testing and placed in the active inventories.

Response to requirements, a key phrase in the 6514th Test Squadron's mission, has assumed growing, new demands as a key support element within the U.S. Defense establishment today. Key to its expanding capabilities is the configuration of a second NC-130H "Hercules" drone launch aircraft.

Captain Wineteer estimates that his organization can respond to mobile target sup-
(Continued on Page 12)

AQM-34L RPV (right) was designed, developed and produced in the 1960s by TRA as photo-reconnaissance, surveillance and electronic warfare assignments. They're in use now as threat simulators by 6514th Test Squadron.

(Continued from Page 11)

port requirements worldwide. Already demonstrated as a capability that combines cost-effective appeal with proven capabilities, the 6514th is scheduled to engage in a long-term Aegis cruiser target support program in coming months.

Utilizing air transport of drone assets and support equipment by Military Air Transport Command aircraft, Wineteer's contingent was ferried aboard the squadron's air-launch transport to Barter Island, with additional ground support cargo aboard.

During the operation, TRA as well as squadron personnel were housed in austere, but snugly comfortable quarters maintained by those who man the North Warning Site for its year-round operations. A single hangar exists for mission preparations.

Key to the highly successful completion of its mission at Barter Island was, according to Sved, "the detailed planning preparations we conducted at Hill prior to our departure.

"All engaged in the operation knew in advance what functions were to be performed. It was a team effort from start to finish," according to Sved.

Included from TRA, in addition to Sved, were Marvin Mucklebrest, C. B. Jones along with contract technicians Al Morey, Glen Whitmore and Butch Halbritter. TRA Chief Photographer Dave Gossett accompanied the detachment, documenting the mission in video and still photos.



NC-130 'HERCULES' with drones (top) conducted 16 flights in radar tests over Arctic Ocean



Mitchell Renews Call For 'Quality, Pride In Work'

State Of TRA Talk Projects Future Growth

Teledyne Ryan Aeronautical exemplifies the qualities of an aerospace company at the leading edge of its field, according to TRA President Bob Mitchell who expressed his views in a "State of the Company" talk March 30 before TRA's Management Association members.

The "Top Management Night" address came 13 months following Mitchell's assignment to Chief Executive Officer responsibilities at TRA.

In a summary-style presentation, Mitchell's review of operations focused on AH-64 Apache operations, Firebee aerial target system enhancements, Model 324 advanced technology RPV system, Model 410 long-endurance aerial vehicle and the spectacularly successful development and flight-test of a Model 350 proof-of-concept medium-range Unmanned Aerial Vehicle.

His talk also included reports on tooling operations that involve the C-17 Air Force airlifter transport as well as F/A-18 subassembly operations for Northrop as one of the company's longest running subcontracts of its kind.

Introduced by TRMA President Dennis Bolger, Mitchell's audience assembled at the Harbor Island



'TOP MANAGEMENT Night' speaker March 30 was TRA President Bob Mitchell, who offered his second 'State of the Company' address since assuming responsibilities as CEO in January 1988.

Marriott Hotel included nearly 200 members and guests. The evening's program included the selection of TRA Vice President, Human Resources Ken Carson as recipient of the 1989 "Silver Knight of Management."

In his second "Top Management Night" address, Mitchell termed

TRA's Apache operations that include manufacturing and assembly of the AH-64 airframe and major flight structures under contract to McDonnell Douglas Helicopter Company, "our number one product."

Praising "all who are associated with the program," he noted that "we help build the best helicopter of its kind in the U.S. Army inventory" and called for continued efforts in cost-reductions, quality increases and the maintenance of schedules.

Turning to TRA's Firebee operations, Mitchell called it "the highest performing system of its kind," noting that product improvements recently incorporated into the BQM-34A Air Force version Firebee identified the Microprocessor Flight Control System and

one of the finest of any I have ever been associated with. Simultaneously, we also designed, developed and conducted a flight test of the Model 350 proof-of-concept on October 22, 1988."

Turning to the company's future, Mitchell noted as a project goal the growth of TRA into a \$500 million firm "not by inflation, but through profit growth." One of the long-term goals identified is also to assume a role in the aerospace industry as a prime contractor in areas of reconnaissance vehicles.

"We're good at what we do and we're on track," he noted, alluding to the company's history of pioneering leadership and to the recognition it has earned worldwide for its many firsts in flight.

Mitchell emphasized the chal-



MODEL 350 'proof-of-concept' medium-range UAV was displayed as scale model for global audiences attending Sea-Air-Space Exposition in Washington, D.C. in March. Bob Mitchell is explaining performance qualities to Air Force visitors at TRA's exhibit. Dave Campbell (second from right) represented the Company during the annual, three-day event as a host.



FIREBEE is 'highest performing system of its kind,' according to TRA President Bob Mitchell, who noted in 'State of Company' talk March 30 that a product improvement program has been applied to BQM-34A Firebees for the Air Force. Production operations currently include Navy, Air Force and Army Firebees.

an uprated turbojet engine.

"This is a perfect example of keeping pace with our customer's needs," he emphasized.

A status report on Model 324 RPV system deliveries to Egypt, completed early this year; Model 410 long-endurance aerial vehicle, which completed phase one, and manned flight tests in 1988, was also included in Mitchell's talk.

He told of the decision by TRA to bid a new medium-range Unmanned Aerial Vehicle (UAV) program that was made in early 1988. "The proposal we submitted in response to the requirement is

challenges faced by TRA in the future, relating to his audience that "we must become creative, looking always for better methods for doing what we do and competence in our performance."

He called for leadership at all levels, noting that "this is a quality preserved throughout our history."

Much of that history—over the 67-year period when the predecessor Ryan Airlines, Inc. was first established in San Diego—was depicted in a video presentation offered as a summary to his talk.

McGill Takes New Post As Executive Vice President

New Structure Outlined For TRA Management

C. E. "Chuck" McGill has assumed responsibilities at Teledyne Ryan Aeronautical as Executive Vice President in a move aimed at enhancing the Company's competitiveness and its work environment, according to Bob Mitchell.

TRA President, Mitchell announced a series of new appointments July 14, 1989 designed to strengthen the Company's overall program management.

Vice President and Controller for Teledyne Continental Motors for 15 years prior to joining TRA in 1980 as Senior Vice President, Administration, McGill has also served as Financial Group Executive, Teledyne Pacific Group.

Included in the executive management organization announced by Mitchell is Rick Pettit, formerly TRA Vice President, Quality, and a 22-year employee at TRA as well as Teledyne Ryan Electronics. Pettit succeeds Bill Cassidy, Senior Vice President, Operations, who has accepted a position with another company.

Pettit joined TRA in 1967 as head of the Company's flight test quality group based at Holloman Air Force Base, N.M. His subsequent assignments include Director and Vice President of Quality Assurance at TRA and TRE.

In his new assignment, Pettit will be responsible for Assembly, Fabrication and Machine Operations, Manufacturing Engineering, Industrial and Plant Engineering, Tooling Design and Fabrication, Material, Operations Control, Computer Integrated Manufacturing, and TRAM Operations.

TRA Vice President, Contracts, Pricing and Subcontracts Bob Scurlock has assumed new responsibilities as Vice President, Programs, a newly created organization into which the essential elements of each Company project will be located, both functionally and physically.

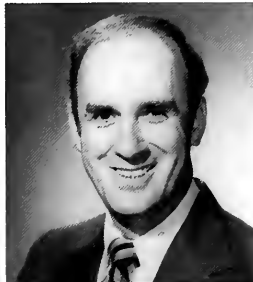
The Program Office was established to focus maximum attention on individual project schedule, cost and hardware performance.

Scurlock launched the production of the AH-64 Apache operations at TRA after joining the company in 1981 following a distinguished Air Force career.

New to TRA this month is Darrel L. Hirsch, Vice President, En-



CHUCK MCGILL
Executive Vice President



RICK PETTIT
Vice President, Operations



BOB SCURLOCK
Vice President, Programs



DARREL HIRSCH
Vice President, Engineering



DAVE ZALK
Vice President, Quality Assurance



NORM SAKAMOTO
Vice President, Mid-Range

gineering. He brings to his new assignment a career spanning more than 30 years at Northrop Corporation, and most recently held responsibilities for Advanced Design Manager at the B-2 division and all new manned aircraft with that company.

Hirsch's responsibilities at TRA will include management of development engineering including support as required to the Mid-Range UAV project.

Mitchell also appointed Dave A. Zalk Vice President, Quality Assurance from former duties as Di-

rector, Quality Assurance.

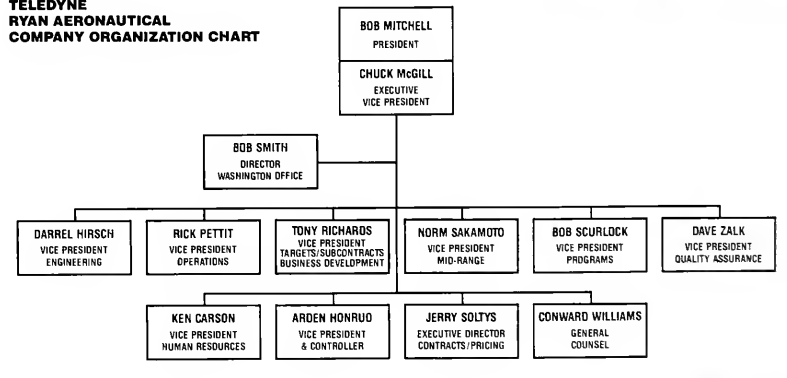
Dave joined TRA in 1985 as Factory Manager on Apache assembly operations. In his new post, Zalk's responsibilities include Quality Assurance operations, Engineering, Materials, Processing and Supplier Quality, as well as Safety, Health and Environmental Affairs.

Norm Sakamoto has also been appointed Vice President and Program Manager for the Mid-Range UAV full-scale engineering development. TRA holds responsibilities to the Naval Air Systems



JERRY SOLTYS
Executive Director Contracts/Pricing

TELEDYNE RYAN AERONAUTICAL COMPANY ORGANIZATION CHART



At Age 73, 'Casey' Rated Tops As Employee

Brent A. "Casey" Kaishas can't account for his work capacity. Other than the fact that, "I like it. It gives me pleasure. There's nothing I'd rather be doing."

All of which brings much pleasure into the life of Teledyne Ryan Aeronautical Machine Shop Manager Bob Atkins' life.

Atkins regards "Casey" as an employee of exemplary work standards. He is a self-starter, according to Atkins, an employee of thoroughly reliable work standards and qualities. And a man who frets over schedules and tasks that fail to meet deadlines.

"I know, without question, that he's going to be at work on time. He'll ask for no passes out," observes "Casey's" boss, who recalls flooded conditions several years ago that delayed the start of the company's first shift operations.

"Casey took off his shoes, rolled up his trouser cuffs and waded on in!"

Granting an interview with reluctance last month, the low-born Casey admitted that he may possess a need for daily work routine that is more compelling than others experience. But this, he insists, is instinctive.

"I've been assigned to Department 130 (Machine Shop) since 1948. It is my way of life. And I like it."

"But you're 73 years old," a reporter protests. "You're well past a customary retirement age. You're entitled to a carefree life of

retirement, drawing Social Security benefits."

Casey mulls this over, acknowledging the options that have awaited him starting eight years ago. He admits that his wife of 34 years, Dorothy Kaishas, has tried several times to broach the subject.

"Look. If a man is healthy, happy at work, productive, and contributing to his employer,

out a component for an Apache helicopter or Firebee. Casey asks. He tells of once working on precisioned titanium landing radar housings for the Apollo moon landings and other monuments of the past with which he has been associated.

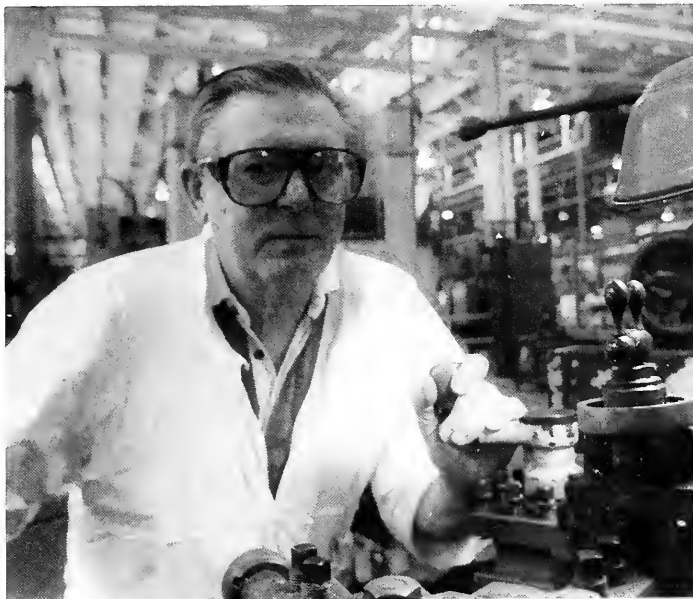
"A person builds up loyalties toward his employer and disciplines toward his work.

It becomes a way of life. Your best friends become those with whom you spend eight hours each day, all working toward common goals and objectives." It is a statement from Casey that narrows to a focus on today's turbulent lifestyles.

He suggests that some of America's most formidable problems are traced to the absence of work ethics that he has enjoyed: personal pride in craftsmanship, achieving quality standards in the finished product, and possessing confidence in completing a very complex task as part of a team effort.

Casey snorts with disgust over America's loss to Japan and other nations of its superior capabilities in engineering and manufacturing. "Somehow, we have simply lost our desire to compete," he concludes.

Now, it's a matter of regaining that desire. The process includes "a certain amount of allegiance to work disciplines. With the proper attitude, work can be made a lot of fun, enjoyable and rewarding," Casey insists.



'CASEY' Kaishas hit 73 this year, 41 of those years spent with TRA

why quit? I've watched as my friends and neighbors did that. Then I've watched them slowly pass on. Maybe they didn't feel needed any longer."

How else, at his age, can a man or woman enjoy each and every day a feeling of vitality equal to standing over a lathe, turning

Harbor View Medical Center Designated

The Harbor View Medical Center, located at 120 Elm Street, is now in use as Teledyne Ryan Aeronautical's primary care facility for employee work-related injuries or illnesses requiring medical treatment.

Both medical care and treatment can be obtained 24 hours daily at that facility and are available, except for emergencies, by appointment only. The telephone number is 619-232-4331.

TRA employees must use this designated medical center unless authorization has been otherwise granted in writing for use of other facilities.

TRA Drug-Free Policy Told

- Employees are expected and required to report to work on time and in appropriate mental and physical condition for work. It is the intent and obligation of TRA to provide a drug-free, healthy, safe and secure work environment.
- The manufacture, distribution, dispensation, possession, or use of a controlled substance on company premises is absolutely prohibited. Violation of the policy will result in disciplinary action, up to and including termination.
- TRA recognizes drug dependency as an illness and a major health problem. TRA also recognizes drug abuse as a potential health, safety and security problem. Employees needing help in dealing with such problems are encouraged to use the TRA Employee Assistance Program and health insurance plans, as appropriate. Conscientious efforts to seek such help will not jeopardize any employee's job.
- Employees must, as a condition of employment, abide by the terms of the above policy and report any conviction under a criminal drug statute for violations occurring on TRA company premises. A report of a conviction must be made within five (5) days after the conviction. This requirement is mandated by the Drug-Free Workplace Act of 1988.

Employee Ethics Training Course Introduced By TRA

Standards Of Conduct At Work Included In Awareness Program

In April, the TRA Ethics Office introduced a new ethics awareness training program providing seminars for small groups of employees. The TRA Ethics Officer, Conward E. Williams, stated that the seminar approach is directed toward addressing ethics issues faced by our employees in the day-to-day performance of their jobs in their individual departments.

Brad Hamlin, TRA Staff Attorney, and TRA Training Administrator Nicki DeNecochea, are the seminar leaders supported by an Ethics Training Committee with representation for all TRA departments.

In one-hour periods, enrollees explore wide ranges of business ethics issues confronted under hypothetical circumstances.

Through open discussion of these situations and references to the Teledyne Code of Business Conduct, Williams believes employees are better equipped to conduct themselves in an ethical manner in the work environment.

Hamlin notes that the hypothetical situations to which classroom discussion is devoted come from various departments throughout the company. Representation is given to all operations. And thus, the training course assumes a personality of individual interest to all.

The discussion-type training, devoted more to awareness of proper or acceptable conduct standards, gains the active participation by all enrolled in the program. "It helps our people think before they act," he explains.

According to Hamlin, rigid guidelines influencing conduct codes simply do not exist for all situations in life. The Code of Business Conduct, published by Teledyne, Inc. in 1986 and again last year, lists policy and procedures in areas prominently identified with business operations.

Williams emphasized that employees should use the Teledyne Code of Business Conduct as a quick reference for ethics issues, but any employee having questions may call his office at Ext. 4305.

He noted that a new ethics poster has been placed on departmental bulletin boards giving the TRA Ethics Hotline, 1-800-727-RYAN and Post Office Box 80383, San Diego, California, 92138-0383, for reporting ethics code violations.

Call Sounded For Summer League Bowling Action

Teledyne Ryan Aeronautical employee bowling competition started May 17 at the Clairemont Bowl, according to TRA Bowling Commissioner Rudy Halabuk.

A call has been issued, soliciting employee participation on Wednesday evenings, starting at 6:30 p.m. The cost is \$7.50 per person.

Information can be obtained on the formation of league team schedules from Halabuk during work hours at Ext. 5329.



EMPLOYEE groups of 20 are undergoing ethics training course

Speaking of Safety

By RON DUKE
TRA Safety Administrator

Sometimes We Learn By Experience



Fortunately, we've escaped fatalities twice since the early beginnings of this year in two separate industrial accidents, each being extremely volatile, threatening our company with far greater damages or injuries.

The difference in both cases was the presence of our Emergency Response Team (ERT); trained volunteer employees who respond professionally to realistic emergency conditions.

Our ERT members have been formally recognized for their deeds. Expressions of the company's gratitude have been awarded. And, for all practical purposes, the accidents and resulting consequences have become a part of the record.

I believe, however, that our daily life-styles in the work environment move at a pace that leaves too little time to fully absorb the significance of emergency teamwork, the kind that was witnessed earlier this year.

There was a recent parallel, a corresponding emergency that claimed the lives of 47 crewmen aboard the battleship USS Iowa. An explosion within one of the ship's 16-inch turrets threatened the lives of all

aboard and the ship itself.

Clearly, there's a major distinction between TRA's accidents earlier this year and the loss of life and damages incurred aboard the USS Iowa. The similarities, though, draw into sharp focus the demands for emergency response. Aboard the USS Iowa, damage control teams are credited for helping avoid greater loss of life and the possible loss of the old battlewagon itself.

Those Navy damage control teams were prepared for the contingency; each man knew instinctively his assignment and, through disciplined training, responded fully to the action required.

We know by experience that our work environment includes a sometimes careless action that can result in injury. I've preached long and hard on safety procedures in the workplace, planning out a task that will expose you to the maximum possible protection from accidental injury.

Sometimes, it takes a realistic experience of life-threatening proportions to get our attention. Hopefully, we're going to repeat a period of many years like that in the past before another serious injury occurs.

In the meantime, there is great comfort in knowing that our Emergency Response Team strategy works in times of peril. And that its members are here, at hand, when needed.

New 'Yankee Doodle Dandy' Captures Dreams

In his native Chinese heritage, 1989 is the "year of the snake" for the former Chou Cheng, a student engineering intern assigned to Teledyne Ryan Aeronautical's Quality Department.

That period in the 24-year-old San Diego State University graduate's life, though, is in the past.

It now is a bright, new future that Joe Cheu is shaping for himself—as a naturalized U.S. citizen with a new name to match.

Standing before U.S. Judge John Rhodes on Friday, April 21, Joe joined a War Memorial Building hall filled with others taking their oath of allegiance to their adopted country.

For the quiet-spoken, ex-refugee, it was perhaps the final goal in a series of ambitions Joe has nourished over a period of more than nine years.

There once was a time when the son of Chinese parents dared not even to dream of reaching America's shores. Those were the years of anguish, desperation and hopeless futility as a member of a Cambodian family whose country was torn apart under Pol Pot's rule. Joe recalled a childhood of government discrimination against Chinese refugees and his flight to freedom.

Once a proud and prosperous family as residents in Phnom Penh, Joe was the sixth son in a family of eight brothers and sisters. Three brothers and his mother were slain following the Communist takeover in mid-1975.

For five years to follow, he endured the haunted life of escape, constantly uprooted from one

sanctuary to another. It is an existence that led by September 1979 to the U.S. State Department and immigration to San Diego.

"I could speak no English, but I was determined to learn," recalled Joe. Within his first year as an eighth grade student, he fulfilled that ambition. His disciplined life-style pursued a rigid set of priorities that included at one period holding two part-time jobs while continuing his education.

"Educational opportunities and professional training toward my career goal, one that's established by me instead of the government," became an obsession with Joe. He credits employment by TRA as a student intern as a "turning point" in his life as he completed SDSU studies.

Interviewed for this story in late 1988, Joe insisted that fulfillment of his dreams included yet one major achievement—naturalization as a citizen.

That accomplished, there is a professional career left to pursue. And, there is also a matter of family life so richly cherished in his native Chinese heritage.

"I hope to someday meet someone who I can marry and start my own family," relates the young man who once could only dream of ambitions unfulfilled.

Among those is the right to cast his vote of choice for elected leaders, to secure benefits to which he's entitled as an American citizen and to shoulder his responsibilities that go with the freedoms we now enjoy.

Joe Cheu's dreams have become reality.



NEW CITIZEN—Joe Cheu, engineering intern at TRA, took oath of allegiance as new U.S. citizen April 21 from U.S. District Court Judge John Rhodes, capturing latest in a series of goals since coming to America nine years ago.

EEO Position Reaffirmed

On an annual basis it is Teledyne Ryan Aeronautical's wish to reaffirm our position in regard to equal employment opportunity and affirmative action.

All employment and personnel practices of the company shall comply with all laws, regulations and directives governing nondiscrimination in employment.

No employee or applicant will be discriminated against because of race, color, religion, sex, national origin or age.

Physically and mentally handicapped individuals, Disabled Veterans and Veterans of the Vietnam Era will be provided equal employment opportunity for any position for which they qualify, so long as the position does not endanger said person's health or safety or the health or safety of co-workers. TRA invites those individuals with disabilities who need reasonable accommodation to contact a member of the EEO staff.

Harassment on the basis of sex, whether physical or verbal in nature, by supervisors, agents or fellow employees, will not be tolerated. It shall be the policy of Teledyne Ryan Aeronautical to maintain a workplace free of sexual harassment and intimidation. Employment shall be on the

basis of merit, qualification and competency to perform the job or position to be filled.

Promotions, transfers, layoffs and terminations shall be made on the basis of merit, qualification and competency, with consideration of seniority as provided by union contract provisions and company policy.

In-plant training and company-sponsored or paid out-of-plant training shall be available to all company employees on the same uniform basis and decided by the same criteria.

Company-sponsored or supported recreational and sports activities shall be available to all company employees on a uniform basis.

Any employee acting on behalf of the company in dealing with applicants and employees shall scrupulously and in good faith conform with the principles and provisions of all applicable legal requirements and diligently pursue the objectives of Teledyne Ryan Aeronautical's Affirmative Action Programs.

Government posters regarding equal employment practices shall be displayed in all company employment offices and on company bulletin boards.

TRA In 1989 Paris Air Show

Teledyne Ryan Aeronautical was one of 17 Teledyne companies to display its product lines for international Paris Air Show audiences attracted biennially to the world's oldest trade show of its kind.

TRA's Model 350 "proof-of-concept" medium-range Unmanned Aerial Vehicle was a focal point of displays that include scale model Firebee aerial target systems. The combined exhibits by participating Teledyne subsidiaries at Le Bourget Field comes at two-year intervals.

The Model 350 test flight article completed its 22-minute flight Oct. 22, 1988 at Mojave, Calif. as a prototype vehicle that can be air- or ground-launched into flight.

TRA President Bob Mitchell headed a TRA contingent of executives who will host visitors to the Teledyne exhibit area. Product briefings and literature were distributed to visitors, offering familiarity with capabilities the products possess.

TRA Vice President Tony Richards said that the Paris Air Show tops the company's annual list of trade show activities.

EMS Adds Zip To Communications

The speed and flexibility of a phone call have been successfully combined with precision and accountability through use of an Electronic Mail system now on line at Teledyne Ryan Aeronautical.

The system, according to Dan Dotson, TRA Management Systems Department, is now available throughout the company.

The software, called Electronic Mail System (EMS) has been in use by other Teledyne computer systems for several years and is now available on TRA's IBM 3081 mainframe. Dotson said that approximately 80 individuals representing 12 departments are using the EMS for a variety of communications functions.

The system's features include a full text editor with word-wrap and paragraph flow capabilities as well as the ability to transmit documents to one or more individuals, printers or routing lists. The system includes a built-in filing system that includes forms handling. It also includes a comprehensive calendar and scheduling of groups as well as individuals.

The system's interconnected link with other Teledyne computer systems facilitates electronic communications with those terminals quickly and efficiently, according to Dotson. Among its current users is the TRA Benefits Department, which transmits accident and sickness data to insurance carriers via EMS. Transmission of this data previously required three work days plus postage and handling time. With EMS, Dotson notes, "the full process is completed in five minutes or less."

Maximization of the EMS is the current objective with expansion of benefits from its use to all TRA departments as an inner-office mail system.

Dotson explains that the EMS has "leapfrogged" the company onto a higher plateau of technology and cost-effectiveness. "It has helped overcome technologies rooted in the 1950s and earlier. And has positioned TRA in a more competitive posture in the process."

Additional information on the EMS can be obtained by calling Dotson at Ext. 1734.



HEART OF Electronic Mail System is IBM 3081 mainframe which can hold 1.2 billion characters of information. Senior system programmer with Management Systems, Dan Dotson notes some 80 employees in 12 TRA departments are currently using EMS.

Cobianchi In New Post

Thomas T. Cobianchi has assumed responsibilities at Teledyne Ryan Aeronautical as Director, Business Development/RPV Programs, it has been announced by TRA President Bob Mitchell.

Cobianchi's immediate prior affiliation was with the Electronics Division, General Dynamics Corporation in San Diego as acting director of Advanced Programs. He was responsible for the administration, planning and implementation of engineering activities.

Cobianchi had previously served at GD Electronics as engineering manager C3 with responsibilities for technical direction of research and development, facilities planning and related requirements.

His career includes an association with Westinghouse Electric Corporation in a variety of managerial assignments in commercial as well as defense products



TOM COBIANCHI

spanning more than 18 years. This includes assignments as director of Marketing, Air Force and Foreign Military in the Defense Products division of Westinghouse from 1982 to 1984.

'Firsts In Flight' Video Created

A 10-minute sound-on, color presentation incorporating highlights of Teledyne Ryan Aeronautical's history of manned and unmanned flight is available for TRA employee use on overnight or weekend checkout from the Technical Library.

Entitled "Firsts In Flight," the video is offered on a first-come-first-served basis.

New Assignments Told

(Continued from Page 14)

Command under terms of a contract awarded June 30, 1989 for the MRUAV system.

Since 1957 and his initial association with TRA, Sakamoto has managed a series of programs related to Remotely Piloted Vehicle design, development and operations. In recent years, he guided the highly successful development of the Model 324 RPV system under contract to the Egyptian government. He also served as Program Manager of the Model 350 proof-of-concept design and development and flight-test program culminating in late October

of last year with its 22-minute test flight at Mojave.

His career includes an assignment as Director, New Business Development at TRE prior to his return to TRA in 1984.

G.M. "Jerry" Soltys has assumed responsibilities as Executive Director, Contract, Pricing and Subcontracts within the new management organization. His prior responsibilities included Contracts management, starting in 1982 with his TRA association. Soltys' career in aerospace includes 20 years of experience with Rockwell International, United Aircraft Corporation and General Dynamics.

'TWIN' Honors Awarded

Teledyne Ryan Aeronautical's Jenny McReynolds was selected as the recipient for Tribute to Women In Industry (TWIN) honors at this year's civic luncheon which was held Thursday, June 1.

A supervisor of New Business Proposals, she joined 100 TWIN honorees at the 10th annual awards ceremony which was sponsored by the San Diego YWCA. McReynolds was also profiled in a special booklet that was distributed at the event.

Eight Named In Shift Of Assignments

Mike Janus, a 23-year veteran in aerospace management, has assumed responsibilities at Tele-dyne Ryan Aeronautical as manager of Composite Operations, reporting to Director of Fabrication, Ron Cotton.

Janus was one of eight named to new posts May 11.

Included in those announced changes are Bob Atkins, manager of Machining Operations; Leo Balsamo, manager, Industrial/Plant Security; Bruce Ford, manager, Scheduled Subassemblies; Rodney Smith, manager, Tool Fabrication; Joe Wright, Operation Control manager and Assembly Production Control.

Also assuming new responsibilities are Craig McQuillan, manager of Targets and Subcontract Assembly and Frank Henderson, manager of second shift operations.

Anniversaries, Promotions Omitted

Coverage given to TRA employee anniversaries and promotions was omitted in this edition. When the *ACHIEVER* resumes its monthly frequency of publishing, these features will be restored.



Caspian, Inc. Wins TRA Praise

TRA SMALL BUSINESS vendor for the year 1989 was given formal recognition in early May to Caspian, Inc. President Cyrus Jaffari (accepting award from Phil Overlund, representing Curt James and TRA Procurement operations). Witnessing the presentation are (from left) Jerry Tolson, Caspian production manager, Chris Howe, production control

manager and TRA Small Business Administrator Chuck Nord. Specializing in chemical milling, Caspian has been affiliated as a TRA vendor 27 years. The company has slightly more than 100 employees and is one of several hundred companies throughout San Diego area with whom TRA maintains contracts for goods and services supporting its operations.

You Be The Judge

In this and succeeding issues of the ACHIEVER, a series of hypothetical situations related to the application of Ethics in the Business place will be presented for written responses by TRA employees. These should be submitted to: C.E. Williams, Ethics Office, or J.B. Hamlin in Bldg. 100 or mailed to Ethics, P.O. Box 80383, San Diego, CA 92138-0383. The best responses will be published in the following issue.

★ ★ ★ ★ ★

SITUATION #1: On your lunch break, you slip over to a local auto supply to pick up a part for your car. The store clerk, assuming you are there on TRA business, deducts 20 percent from the cost of the part. The deduction has been negotiated as part of a business arrangement between the dealer and TRA. Are you under an obligation to tell the clerk you are on personal business? Why or why not?

★ ★ ★ ★ ★

SITUATION #2: You are using a TRA company car to pick up some equipment outside the plant. Because it is during your lunch hour, you also take several small side trips for personal business. Your lunch break has been taken first for the official TRA business, then for your personal business. Is this okay? Why?

Apache Team Cops Award For Pride, Excellence

Team Center 013 holds the inaugural "Pride In Excellence" award this month, the first group recognition to be paid under a newly introduced awards program that engages all Manufacturing operations in a competition in which overall improvement is the criteria.

Under the management of Dave St. John and the supervision of Joe Crutcher, the Apache team's selection was based upon a six-month evaluation of all team center activities.

Presented April 24 by Vice President Rick Pettit, the banner-type award is on display at the Team Center 013 work desk.

In brief, informal remarks, Pettit issued his praise for the Team's consistent improvements in quality, scheduling and related operations.

Team Center 013 is comprised of Alfredo Agredano, Romulo Bacod,

Cray Cox, Amor Del Rosario, Stephen Eicholtz, Michael Higgins, and Ambrose Jones.

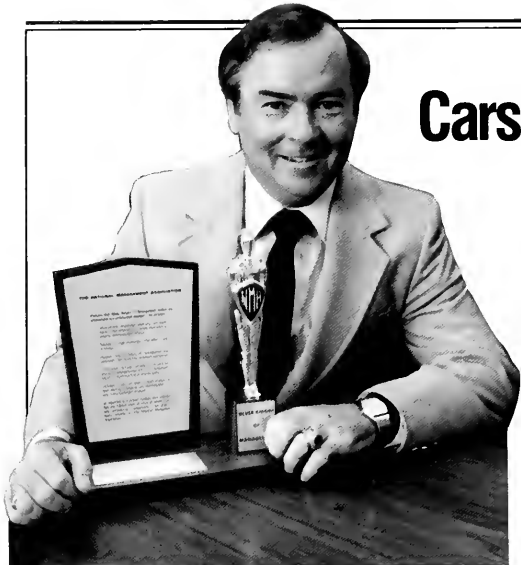
Included also are Petie Maynard, Robert Martinez, John Morton, Dionisio Peralta, Marcelino Phee and Michael Riebe.

TRA's "Pride In Excellence" program is in effect company-wide, covering three primary areas of application. Phase one incorporates individual and group employee initiatives aimed at maintaining cleanliness in the workplace.

New methodologies are part of the program's second phase, also already under way. The third phase involves capital investments through acquisition of major equipment designed to enhance productivity.

Key to the success of the program are objectives related to cost reductions, quality improvement and maintenance of schedules.

Carson TRMA's Top Manager



'SILVER KNIGHT'—Ken Carson is TRMA's recipient of the professional management award for the 1988-1989 term. Presentation was made March 30 at 'Top Management Night.'

Teledyne Ryan Aeronautical Human Resources Vice President Ken Carson is the recipient of this year's "Silver Knight of Management" award highlighting Teledyne Ryan Management Association's (TRMA) "Top Management Night" program on March 30.

This coveted award represents the highest order of professional recognition that can be given at the chapter level of National Management Association activities.

A 23-year employee who began his career here, Carson assumed his current position in 1984. He is credited for introducing a broad range of innovative programs responding to the needs of an expanding company, including training more than 1,000 assemblers and other manufacturing employees during a critical period of rapid growth associated with the Apache program.

TRA's Employee Assistance Program (the first in Teledyne), Drug and Alcohol abuse policies, formation of an Emergency Response Team and implementation of Hazardous Materials management and safety programs were created under his direction.

Company-wide computer training, extensive management development training, and the recent successful negotiation of a new labor contract add to the list of accomplishments for which Carson was selected as a "Silver Knight."

Hired in 1967 to work in purchasing-logistics operations, his career includes assignment to TRE as Personnel Manager in 1980 returning to TRA four years

later to his current position.

TRMA President Dennis Bolger, in presenting the "Silver Knight" award, cited Carson for qualities of leadership and personal acumen, praising the New York state native for contributions that "have significantly upgraded and enhanced the Company's human resource."

In accepting the award, Carson credited his staff for recognition that was paid to him. "A leader gains that position as a direct measure of the support that is provided by those under his or her supervision. Our Human Resources group is one of the most dedicated with whom I've ever been associated," he emphasized.

Every day in this Company, according to Carson, "there are new opportunities for career development. Sometimes, those opportunities are not readily identified. It may be a task that has distasteful qualities. Once performed, though, the response to requirement creates a bridge of opportunity," he reasons.

Educated for a teaching career, Carson graduated from Western Kentucky University as a Political Science major and added a Masters Degree in Education to his formal studies. "What I was really after when I joined this company was two year's of work experience that I could use as a foundation for my career in industry and a resume builder."

Fortunately for TRA and its 1,500 employees, Ken Carson never did use that resume or his experience here to qualify for a position elsewhere.



TRA EXHIBIT visitors at Association of Unmanned Vehicle Systems symposium in Washington, D.C. July 17-20 included captains A. J. Olmstead (left) and P. E. Mullowney. Olmstead has relieved Mullowney as Program Manager of Unmanned Aerial Vehicles Joint Program Office. Exhibit featured TRA's models 324 and 350 medium-range Unmanned Air Vehicle system.

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