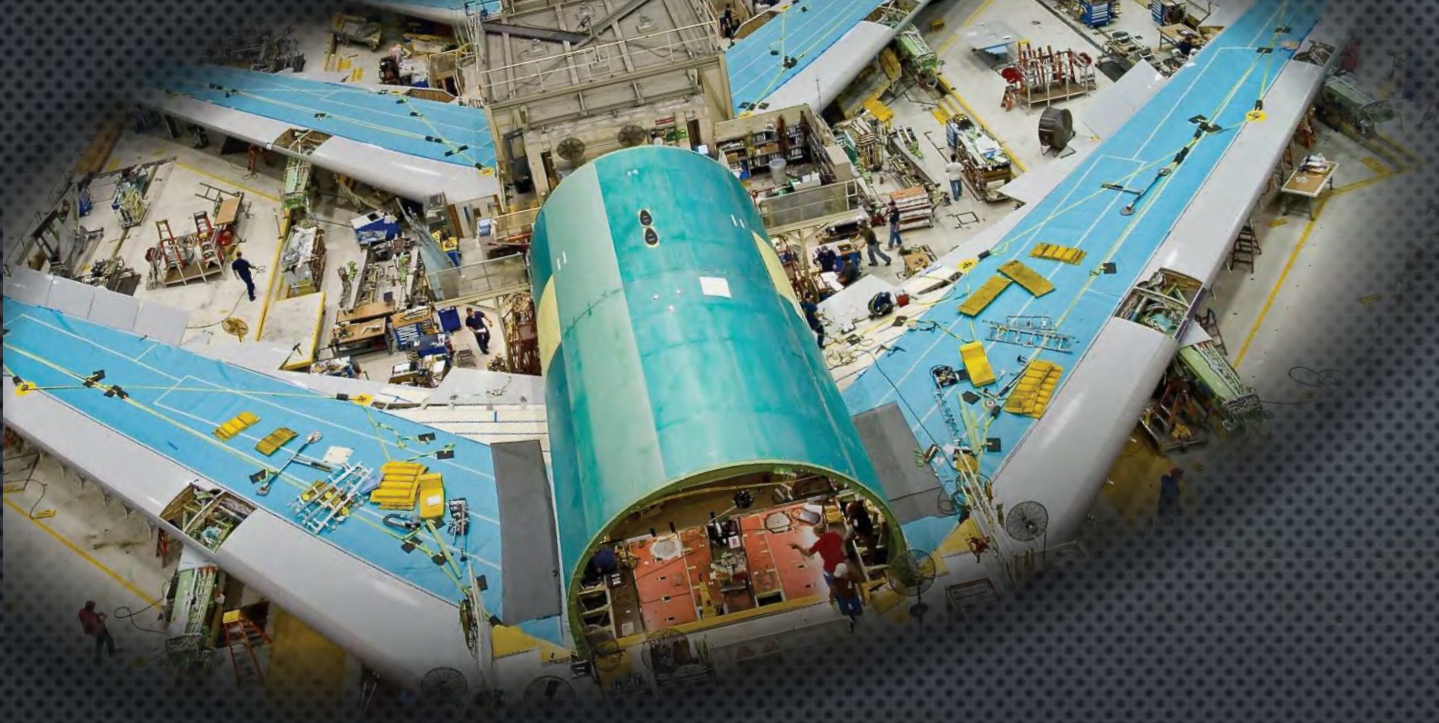
BRON AEROTECH™

aerospace materials to spec

BRON TEMPLATE™

zero defects ™



OUR COMPANY

BRON AEROTECH, LLC IS AN AS9100*-CERTIFIED SMALL BUSINESS SUPPLYING BAC-SPECIFIED MATERIAL SOLUTIONS, AS WELL AS A FULL LINE OF AIRCRAFT, MRO AND SPACE-QUALIFIED PRODUCTS.

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*Certified through NSF-ISR

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THE BRON PHILOSOPHY

IDENTIFY AND TARGET THE BIGGEST ISSUES THAT OUR CUSTOMERS ARE FACING IN THEIR PRODUCTION AND INSPECTION.

FIND THE BEST PRODUCT. DEMO AND TEST AS NEEDED. SPLICE, PRINT, DIE-CUT, KIT AND CREATE NEW PRODUCTS TO SOLVE PROBLEMS.

SHARE PRODUCTS WITH ALL NECESSARY DEPARTMENTS. TRAIN EMPLOYEES ON BEST USE. FOLLOW UP ON QUALITY AND DELIVER SCHEDULES. BLANKET ORDERS AVAILABLE.

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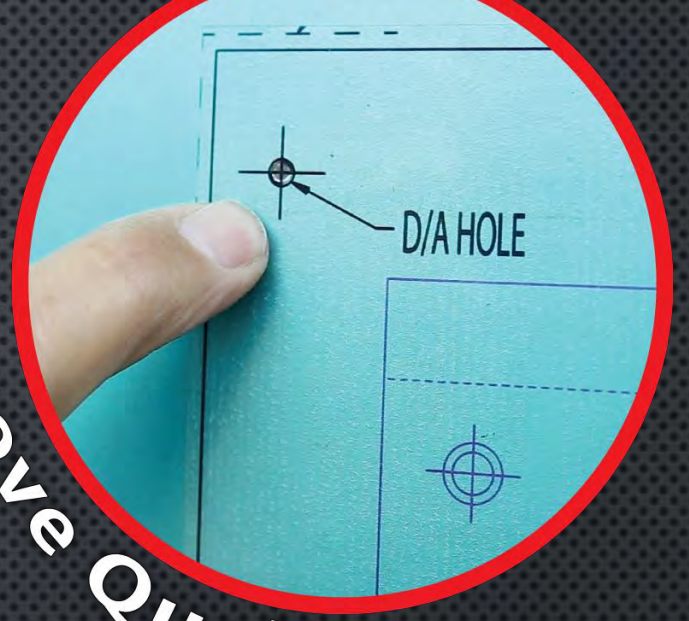
MEET THE BRON TEMPLATE



- MANUFACTURING AID
- THE BRON TEMPLATE™ IS A UNIQUE ADHESIVE MYLAR TECHNOLOGY FOR AEROSTRUCTURE ASSEMBLY, FABRICATION AND MODIFICATION.
- THIS INNOVATIVE NEW TOOL WAS DEVELOPED BY BRON AEROTECH FOR APPLICATION THROUGHOUT THE BOEING AEROSPACE FLEET – COMMERCIAL AND MILITARY AIRCRAFT, AS WELL AS SPACE & SATELLITE.

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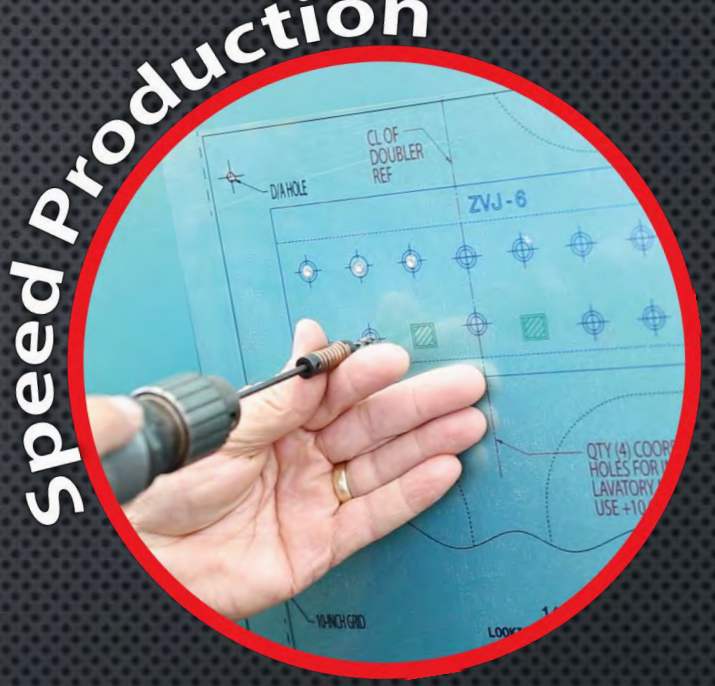
WHAT DOES IT DO?



- The Bron Template™ provides Aerostructure builders with improvements in quality and speed of production, allowing engineering and automated assembly resources to be utilized more efficiently - reducing cost.
- Improving on traditional aircraft mylars, the Bron Template™ brings that trusted and proven assembly tool into the modern era of aircraft assembly, providing many advantages and improved process capabilities.

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WHAT DOES IT DO?

- For assembly operations, fabrications or modifications, all necessary instructions, planning information, feature locations, or specifications can be precision-printed onto the Bron Template™.
- The Bron Template is quickly applied and work begins.

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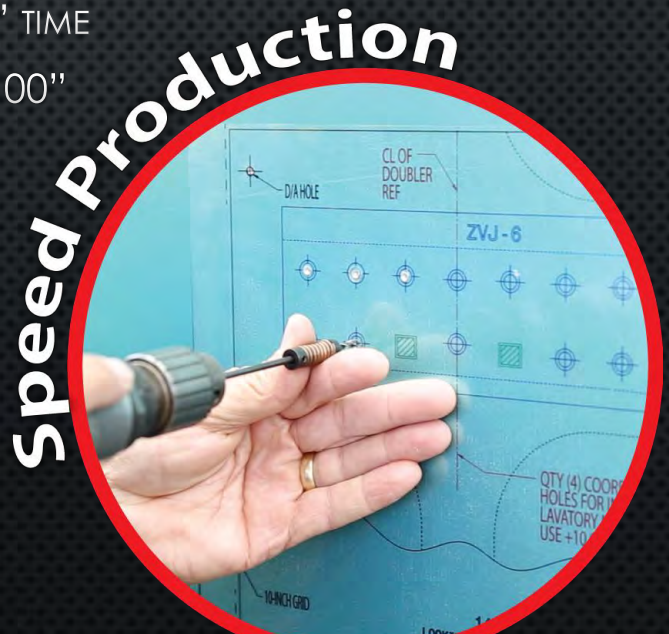
FEATURES

- Proprietary Bron Aerotech material spec-qualified for use on aerostructure
- Proven - widely used for drilling and surface protection applications
- Virtually eliminates the need for hand layout
- Locates within .0015"
- Impressive reduction in rework tags and defects
- Can be applied to flat or curved surfaces
- Contains instructions as well as feature locations
- Eliminates need for assembly mechanics to interpret engineering requirements/drawings
- Quality Product acceptance qualified
- Color differentiation/coding can be used to discriminate fastener types, sizes and stayouts
- A visual planning tool – provides a visual reference to help maintain internal edge-margins
- Time and labor savings –maximizing the effective use of mechanics' time
- Size: Up to 50" x 100"
- Easy to apply
- Repositionable



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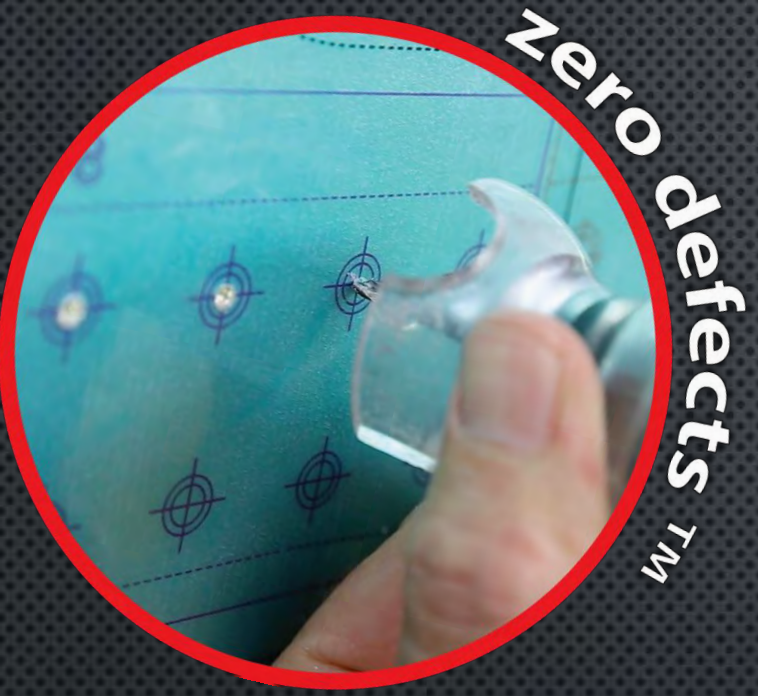

HOW DOES IT WORK?

- THE BRON TEMPLATE™ IS APPLIED TO THE WORK AND ACCURATELY INDEXED (+/- 0.0015") USING TOOLING FEATURES (EOP'S, TOOLING HOLES, DA'S, ETC.). THE ADHESIVE SECURES IT IN LOCATION.

WHAT IS IT?

- The Bron Template™ is a clear, 4-mil polyester adhesive film. Precision digital CAD graphics are printed onto the film at full-scale and verified to tolerance.
- You can drill, install, rivet or machine to or thru the Bron Template™. Spec-approved for use on Boeing aircraft – it applies directly to the workpiece!

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PROBLEMS SOLVED

FAILURE MODES AND REWORK ISSUES ELIMINATED OR REDUCED:

- COUNTERSINKS MISSING AND COUNTERSINKS SHOULD NOT HAVE BEEN DRILLED (PAN HEADS)
- FASTENER HOLES ARE MISSING AND FASTENER HOLES SHOULD NOT HAVE BEEN DRILLED (STAY-OUTS)
- HOLES SHOULD NOT BE FULL-SIZE (PILOTED UNTIL THE NEXT ASSEMBLY SEQUENCE)
- HIGH-DENSITY FIELD FASTENER PATTERNS WITH MULTIPLE SIZES OR CONFIGURATIONS
- IRREGULAR LINEAR FASTENER PATTERNS (ALONG LAPS, STRINGERS, CHORDS OR BULKHEADS)
- FASTENER HOLES DRILLED INCORRECTLY DUE TO MIS-READING/TRANSFERRING THE PRINT/PLAN DEFINITION

PROCESS IMPROVEMENTS

- Identify precision drill hole location within tolerance
- Label fastener type and size clearly
- Easily identify stay-out areas
- Added drilling and countersinking surface protection

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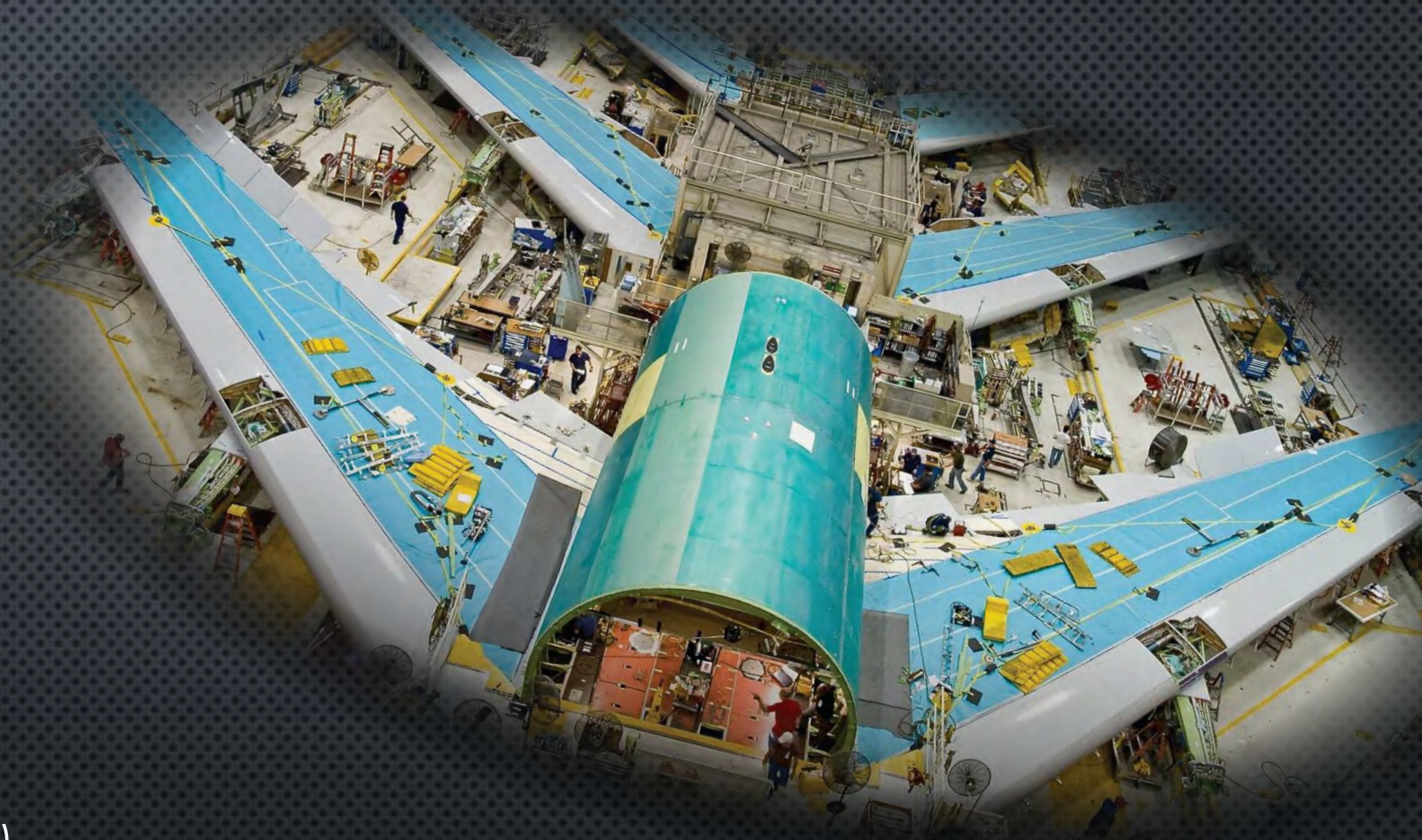
QUALIFIED



- QUALIFIED TO BOEING SPECS:
- BAC 5034-4 (TAPES)
- 5034-1 (SURFACE PROTECTION)
- 5037 (PART MARKING)
- BSS D1-8110-9 (USE OF MYLAR)

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EXAMPLE - AOG

- In a recent application, Triumph Aerostructures applied Bron Template™ technology in production of an "AOG" 747-400 46-section fuselage skin. The fab was accomplished at Triumph's (Hawthorne, CA) 747 fuselage skin fabrication facility.
- In this application, the Bron Template™ was applied to the 46-section skin assembly using EOP features of IML skin doublers, defining fastener hole location, hole size and countersink configuration, as well as providing inspectors with a qualified means for product acceptance.
- The Bron Template replaced CNC drilling operations, thereby eliminating days-worth of scheduling, tool orders, CNC programming/tooling/set-up & try-out, allowing assembly mechanics to accurately locate, drill and install qty. (450) precision fastener holes to CNC tolerance on the replacement skin panel within a single shift, with 100% product acceptance.

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EXAMPLE - AOG

- This photo shows the 747 AOG Bron Template™ applied to the skin assembly IML surface.
- In this application, EOP features of internal doublers establish Bron Template™ placement.

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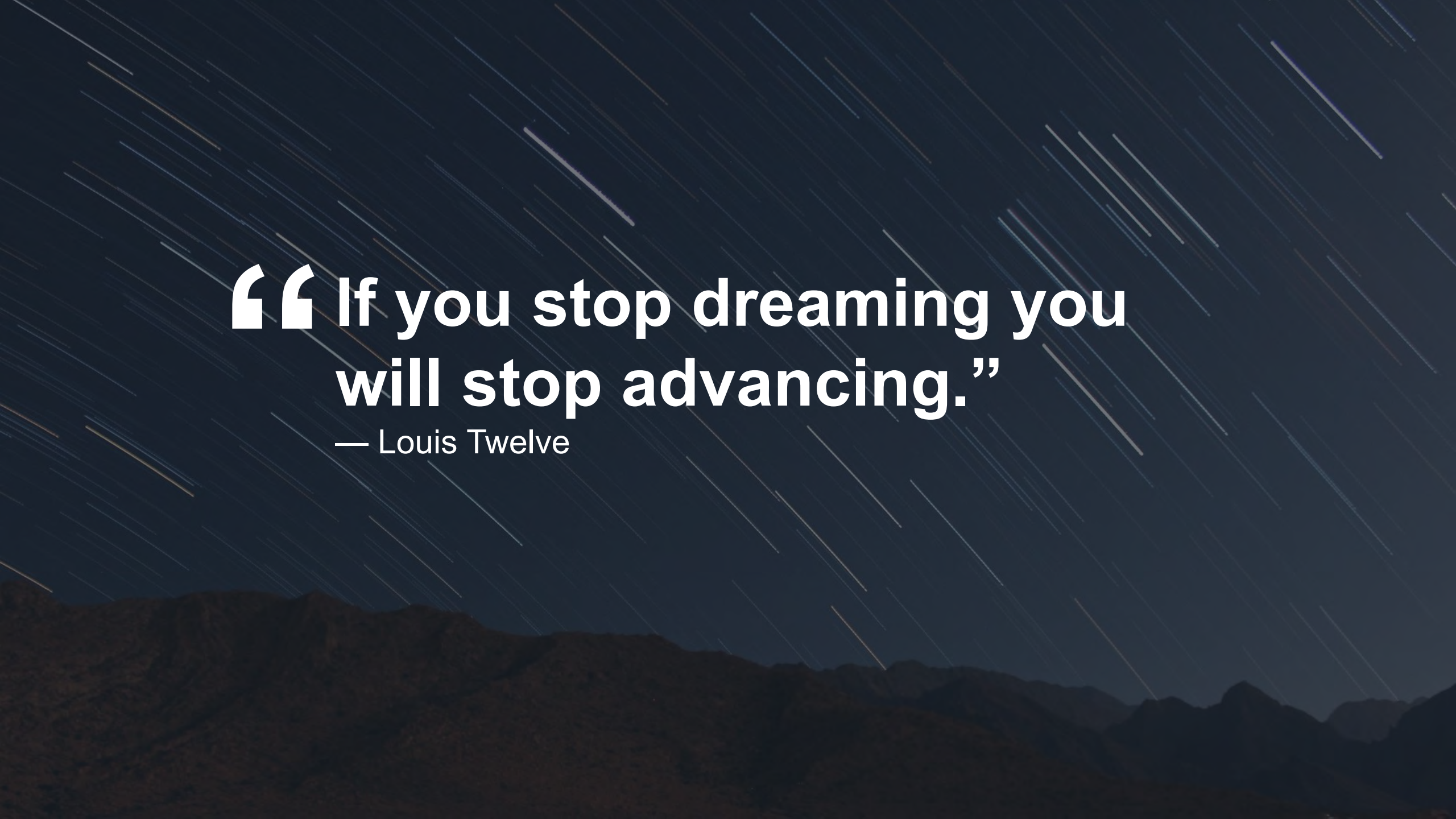
“If you stop dreaming you will stop advancing.”
— Louis Twelve

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